



# **John Reich Journal**

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# JRCS

**JOHN REICH COLLECTORS SOCIETY**  
**P.O. Box 1680 Windham, ME 04062**

The purpose of the John Reich Collectors Society (JRCS) is to encourage the study of numismatics, particularly United States gold and silver coins minted before the introduction of the Seated Liberty design, and to provide technical and educational information concerning such coins.

Annual dues .....\$25.00  
 Life Membership .....\$625.00

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The John Reich Journal is the official publication of the Society and is distributed to all members in good standing. Members are encouraged to submit any articles encouraging the study of numismatics and / or relating to early United States gold and silver coins to the editors. Especially needed are articles containing new information about die marriages, die states of published die marriages, attribution methods, collections, collectors, etc.

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Cover Photos: 1836 B-3 small size quarter. One of the most dramatic LDS examples in the entire bust quarter series displaying both obverse and reverse breaks along with die buckling at the lower drapery. Popular and very collectible because it can be found easily with the breaks (R-1) although much tougher in the early die state. Owned by Glenn Marx.

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Official publication of the  
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## Editors' Comments

We have reached the end of another year of the journal. The holidays are just around the corner and the thoughts of a sunny FUN show are beginning to creep into our minds. We will be having a regional meeting at this year's FUN show on Friday January 11, at 9AM. David Finkelstein will be presenting some of his recent research into the early bust coinages. Please plan on attending the meeting if you are in Orlando for the show.

You will find enclosed with this journal the dues notice for next year's membership in the Society. Please take the time to fill out the information and send your check to Steve at the Maine PO Box as soon as possible. You will find your membership number on the mailing label following your name. Remember to get that renewal in as soon as possible to assure that you do not miss any issues of the JRJ. Publication plans are for the early Spring, pre-ANA, and Fall of 2013. Also, we are always in need of articles, letters and other submissions to fill the pages of your favorite publication. Consider submitting something for next year's editions.

It is also time to prepare for the EAC/JRCS convention that will be held in Newark, OH (a suburb of Columbus) on May 2-5, 2013. The host hotel is the Cherry Valley Lodge. They can be reached at 800-788-8008 and the EAC convention rate is \$129 a night. There are still bourse tables available for anyone interested. You can receive more information by contacting David Consolo, 37860 Aurora Rd, Solon, OH 44139. You must be a member of EAC to obtain a table due to insurance regulations. If you are not already a member of EAC you should consider joining today! Dealer setup is Thursday the 2<sup>nd</sup> with the happenings immediately following the welcome reception. We are accepting suggestions for die marriages to be studied for each of the series and need volunteers to help at the tables. This is a wonderful opportunity to not only view a group of very interesting coins, but to meet many likeminded collectors. Please contact Brad at [jrcs19@roadrunner.com](mailto:jrcs19@roadrunner.com) if you can help.

The David J. Davis dime collection was sold by Stacks/Bowers this year after David lost his battle with cancer. My review of the sale is contained later in this issue. I am joined by frequent contributors David Finkelstein and Henry Hilgard as well as newcomer Eric Krauss. Enjoy the submissions and hope to see you soon at FUN.

### **BUST DOLLAR COLLECTORS**

The Bust Dollar Census will be included in the next issue of the journal. You are encouraged to send your census including duplicates and die states to:

W. David Perkins at [wdperki@attglobal.net](mailto:wdperki@attglobal.net)

If you need to send a paper copy to David, email him for instructions.



# LETTERS TO THE EDITOR

## *Henry Hilgard Writes:*

Regarding the striking of Jeff Reichenberger's double struck bust half dollar (Fascinating 1836 Double Struck Half, JRJ Volume 22/Issue 1, May 2012, pp. 5-13), the features on his handsome 1836 O-101 that require explanation are (1) an obverse that shows no evidence of 2 strikes, and (2) a reverse with clear evidence of 2 strikes with about a 5 degree rotation between the strikes. While the explanation provided in the article certainly accounts for these features, here is an alternative explanation.

The first strike was uniface, happening when 2 blank planchets were in the coining chamber at the same time, one on top of the other. Jeff's piece was the one ending up with a strike from the reverse die and a blank obverse. Then the uniface piece was struck a second time in an attempt to make it into a good looking half dollar. However, during this second strike it was placed in the coining chamber in such a way that the second reverse strike was rotated about 5 degrees from the first reverse strike.

If this had been the sequence of events, the result would be Jeff's coin with one obverse strike and two reverse strikes. I believe that Ken Hill was the first to put forward this sequence of events (first uniface strike, second normal strike) to explain how bust halves came to be double struck on one side only (Double Struck Capped Bust Halves, JRJ Volume 12/Issue 1, December 1998, pp. 27-32).

If this alternative explanation is correct, what happened to the other uniface piece that was struck along with Jeff's piece during the first strike - the one that was struck only by the obverse die? If it too was corrected by a second strike, perhaps another double struck 1836 O-101 can be found - one that shows clear evidence of 2 obverse strikes but only a single reverse strike.

# **Heraldic Eagle Die Analysis: Reverse Star Patterns**

## **David Finkelstein**

In my JRJ article titled “Bust Coin Patterns – Or Lack Thereof”, I theorized that:

The Mint created prototype (or experimental) dies to test new ideas and possible changes to the existing production design elements. These prototype dies were placed immediately into production, and struck the coins that we now buy, sell, collect and identify in die marriage reference books. The prototypes tested were either discarded or adopted”.

I believe that my theory is applicable to the head die<sup>1</sup> star configurations documented in my JRJ article titled “Bust Coin Obverse Star Patterns”. I also believe that my theory is applicable to the reverse star configurations. So here we go...

### **Continuing In The Footsteps Of Robert Hilt**

Many people believe that there are 2 different star configurations surrounding the eagle’s head on the Heraldic Eagle reverses; Arc and Cross. Robert P. Hilt III, in his book Die Varieties Of Early United States Coins, believed that there were 4 star configurations. Hilt’s book is difficult to understand. I have read it many times, and I still don’t understand parts of it. Hilt’s 4 star configurations are the Seal Cross (or 13 Star Cross) Design, 16 Star Arc Design, 1<sup>st</sup> 13 Star Arc Design, and 2<sup>nd</sup> 13 Star Arc Design.

Hilt’s Book was published in 1980, so I assume that he started his research in the 1970s, if not earlier. Although reference books by Valentine, Browning, Overton, and Bolender were available, he did not have access to the research, books and articles by Bass, Borckardt, Bowers, Dannreuther, Davis, Logan, Hilgard, McCloskey, Price, Reiver, Scuderi, Sholley, Souders, Taraszka and Tompkins (just to name a few). Hilt did not have Internet access to images of coins sold or auctioned by companies such as Bowers & Merena, Ira & Larry Goldberg, Heritage, Stacks, and Stacks Bowers. In addition, he did not have access to the images of coins on The American Numismatic Society, Harry W. Bass Jr. Foundation, and PCGS web sites.

I am not taking credit for research done by others before me. I am simply compiling all of the research available and looking at the entire Heraldic Eagle design; not just one denomination. I do, however, believe that some of my observations and conclusions have never been published before.



## **There Are 7 Reverse Star Configurations**

In addition to analyzing pictures of the Heraldic Eagle reverse dies in the various silver and gold die marriage references, I viewed images of the reverses that were available in the Heritage Auction Results Archive and the Harry W. Bass Jr. Foundation website. Every reverse die can be viewed from the combination of these two sites.

Had I focused on only Half Dollars, I would have seen 2 different star configurations surrounding the eagle's head. By analyzing all 8 Heraldic Eagle denominations, I have identified 7 different star configurations surrounding the eagle's head. They are (1) 16 Star Random, (2) 16 Star Arc/Random, (3) Hilt's 16 Star Arc, (4) Hilt's 1<sup>st</sup> 13 Star Arc, (5) Hilt's 2<sup>nd</sup> 13 Star Arc, (6) Hilt's 13 Star Cross, and (7) 13 Star Arc/Cross.

Note that Hilt included my 13 Star Arc/Cross Configuration into his 13 Star Cross Design. I believe they are two distinct cross configurations. Also note that the Bowers & Borckardt "Line Star Pattern" is Hilt's "13 Star Cross Design".

## **Die Creation vs. Die Usage**

Hilt explained his Group Strength theory on page 5 of Die Varieties Of Early United States Coins. This theory is relatively unknown to many in the numismatic community, and in my opinion it is a valid and extremely important theory. To paraphrase, Hilt stated that Robert Scot reported to a Congressional committee in 1795 that one die took several days to complete. Based on rarity ratings and known die states, we know today that many dies failed relatively quickly or were used extensively until they wore out. When a die became unusable while in the screw press, it would not be practical for the Mint to halt coining operations for a few days and wait for a new die to be created. Instead, the Mint had multiple completed head dies and reverse dies stored in reserve.

When a die became unusable, a replacement die could be used in its place to keep production going. The trick was to have the appropriate number of completed head dies and reverse dies in reserve. This number of dies was Hilt's "Group Strength". Each denomination had its own Group Strength because there were different production demands for each denomination. For example, since Half Dollars were minted in much larger quantities than Quarter Eagles, the Half Dollar Group Strength was larger than the Quarter Eagle Group Strength.

Hilt theorized that as dies became unusable during production and were replaced from the Group Strength, it was the Engraving Department's responsibility to create new dies to maintain each denomination's Group Strength. As a result, the Engraving Department was continually creating new dies to replace older dies when they wore out, failed, got damaged or otherwise became unusable.

Based on emission order sequences and the dates on the head dies, we generally know when a head die and reverse die pair was used. Do not confuse this with when the dies were created.

Since reverse dies were not dated, there is no way to determine, with 100% accuracy, in which year a specific reverse die was created.

After a die was created, it was placed in a storage container. I believe that each denomination had its own storage container, with the exception that Dime and Quarter Eagle reverse dies were stored in the same container. Likewise, Half Dollar and Eagle reverse dies were also stored in the same storage container. When a die became unusable during coinage production, a replacement die was removed from the storage container. Was the die removed the last one put in, the first one put in, or a random die? Based on my analysis, I believe that replacement dies were retrieved randomly from storage when the production die in the screw press became unusable.

Based on Hilt's Group Strength Theory, and my analysis, I believe that a reverse die could have been used for the first time 2 to 7 years after it was created). As a side note, Hilt's Group Strength Theory explains why there were leftover, unused head dies that were overdated, then placed in production. Think about it!!!

### **13, 14, 15 & 16 Reverse Stars**

Table 1 specifies the number of known Heraldic Eagle reverse dies, broken down by the 7 star configurations that I previously identified. The earliest known dated head die associated with each configuration is specified. In addition, the number of reverse dies known with 13, 14, 15 and 16 stars are specified for each star configuration.

**Table 1: Heraldic Eagle Reverse Dies By Star Configuration**

Reverse Star Pattern	# Known Rev Dies	First Year Of Use	13*	14*	15*	16*
16 Star Random	1	1797	-	-	-	1
16 Star Arc/Random	2	1796	-	-	-	2
Hilt's 16 Star Arc	4	1796	-	-	-	4
Hilt's 1 <sup>st</sup> 13 Star Arc	13	1797	12	1	-	-
Hilt's 2 <sup>nd</sup> 13 Star Arc	141	1798	140	-	1	-
Hilt's 13 Star Cross	16	1798	15	1	-	-
13 Star Arc/Cross	2	1797	2	-	-	-
Totals	179		169	2	1	7

Although I previously named the 7 star configurations, I have not yet described them, nor have I included images of examples. In my opinion, my observations and conclusions from the data in Table 1 should be made available before each star configuration is documented.



1. 5 of the 7 different reverse die configurations (totaling 22 dies) were first used with 1796 and 1797 dated head dies. This implies that the Mint experimented with reverse star configurations at the beginning of the Heraldic Eagle design.
2. Only 7 dies (4%) of the 179 known reverse dies have 16 reverse stars. These dies were first used with 1796 and 1797 dated head dies. The 16 star reverse was quickly abandoned and replaced with the 13 star reverse.
3. There are 29 known reverse dies with either Hilt's 1<sup>st</sup> 13 Star Arc or Hilt's 13 Star Cross configuration. If, in fact, it took approximately 58 man days to create these dies (as per Scot's Congressional testimony), then the Mint took a good look at these reverse star configurations before discontinuing them.
4. The progression of the reverse star configurations was most likely Hilt's 16 Star Arc (1796) ► Hilt's 1<sup>st</sup> 13 Star Arc (1797) ► Hilt's 2<sup>nd</sup> 13 Star Arc (1798).
5. I do not yet know where Hilt's 13 Star Cross and the 13 Star Arc/Cross fit into the progression of reverse star configurations.
6. Mistakes were made resulting in the 16 Star Random and 16 Star Arc/Random configurations, 2 reverse dies with 14 stars, and 1 reverse die with 15 stars.

### 1. 16 Star Random Configuration (Long Neck)

Figure 1 has two images of 1797 \$5 BD (for Bass-Dannreuther) Reverse D. This is an example of the 16 Star Random configuration. 9 stars to the right of the eagle's head align on diagonal lines in one direction, but not the other. The 7 circled stars look randomly placed. The arrow points to the star that looks way out of place. Note that the eagle has a long neck.



**Figure 1: Random Config - 1797 \$5 BD Rev D**

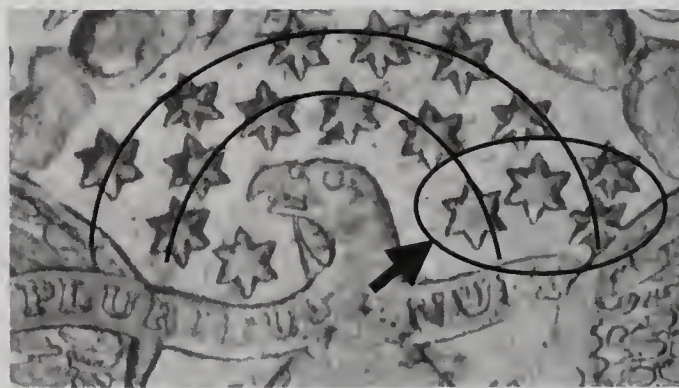
I have no idea what the engraver's intentions were with this star configuration. Whatever the intent was, it was not executed correctly. The 16 Star Random configuration occurs on only this reverse die which was used to create 2 die marriages; 1797 \$5 BD-6 and 1797/5 \$5 BD-7.

**In my opinion, the 16 Star Random configuration was implemented by mistake.**

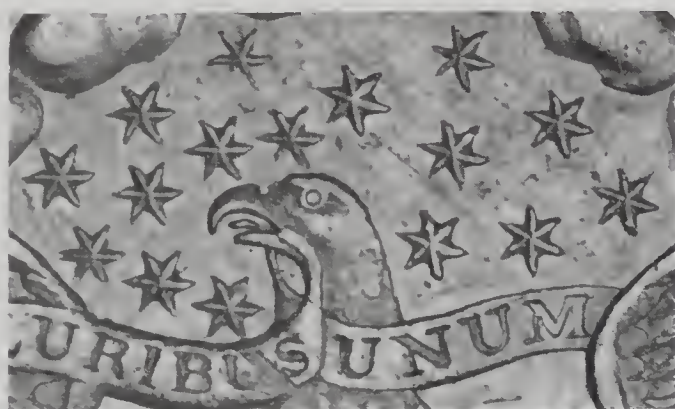
The first Heraldic Eagle die marriages were 1796 Quarter Eagles. In my opinion, 1797 \$5 BD Reverse D was probably one of the Mint's first Heraldic Eagle reverse dies. Since the engraver had minimal experience creating Heraldic Eagle reverse dies it seems plausible to me that early on in the Heraldic Eagle design, dies with mistakes occurred more often than not, and were placed into production. Why? The labor and materials involved were too costly to simply throw them away and not use them.

### 2. 16 Star Arc/Random Configuration (Long Neck)

Figure 2-A has two images of 1796 \$2 ½ BD Reverse C. Figure 2-B has two images of 1795 \$5 BD Reverse J. Both images on the right have two arcs superimposed on top of the stars. Note that both reverses have eagles with a long neck.



**Figure 2-A: Arc/Random Config: 1796 \$2 ½ BD Rev C**



**Figure 2-B: Arc/Random Config: 1795 \$5 BD Rev J**

1796 \$2 ½ BD Reverse C has multiple issues. There was definitely an attempt to place the stars in an arc configuration, however:

1. The 4 circled stars in Figure 2-A look like they were randomly placed.
2. 2 stars within the ellipse are not in line with any arc.
3. The rightmost star of the upper arc is partially buried in the eagle's wing.



4. The lower right star of the lower arc (identified by the arrow) should be further left, next to the eagle's neck, and not part of an arc. If you look at images of every Heraldic Eagle reverse die for every silver and gold denomination, there is always a star right behind the eagle's head that has its lower point very close to or touching the scroll.
5. The star between the lower and upper arcs should be in the lower arc.
6. The star to the right of the upper arc should be part of the upper arc.

On 1795 \$5 BD Reverse J, there was an attempt to place the stars in an arc configuration, however the execution failed. Two stars were randomly placed outside the arcs. Those stars are circled in Figure 2-B.

I am labeling this star configuration as the 16 Star Arc/Random configuration. The intent was to implement arcs, but things went wrong. Significant mistakes were made. The 16 Star Arc/Random Configuration occurs on only these 2 reverse dies.

**In my opinion, the 16 Star Arc/Random configuration was implemented by mistake.**

Since 1795 \$5 BD Reverse J was mated with a 1795 dated head die, it is forever identified as a 1795 reverse. This does not mean that this reverse die was created or used in 1795. Consider the following:

1. Half Eagle production began in 1795. The Small Eagle reverse was used with 1795, 1796 and 1797 dated obverses. There are 4 Small Eagle die marriages dated 1797, as well as 3 Heraldic Eagle die marriages dated 1797. All Half Eagle die marriages dated 1798 to 1807 have a Heraldic Eagle reverse. It is therefore reasonable to assume that Half Eagle production with Heraldic Eagle reverses began in 1797.
2. A different reverse die, 1795 \$5 BD Reverse K, also has a Heraldic Eagle reverse. It was mated with 1795 \$5 Obverse 7 to create 1795 \$5 BD-15 (See Figure 2-C). It was also mated with 1797 \$5 Obverse 3 to create 1797 \$5 BD-5 (See Figure 2-D). The reverse die state with the 1797 dated head die is relatively perfect. The reverse die state with the 1795 dated head die has a long die crack across the bottom of the reverse and a cud over TE in UNITED. Thanks to the research by Bass and Dannreuther, there can be no doubt in anyone's mind that 1797 \$5 BD-5 was struck before the cud developed on 1795 \$5 BD-15. This implies that 1795 \$5 BD-15 was probably struck in 1797, or a later year.
3. Do not assume that all 1795 dated Half Eagle head dies paired with Heraldic Eagle reverses were struck in 1795. This was just proven with 1795 \$5 BD-15. It seems more likely that 1795 Heraldic Eagle Half Eagles were struck in 1797, or a later year.





Figure 2-C: 1795 \$5 BD 15 – Reverse Cud



Figure 2-D: 1797 \$5 BD 5 – Reverse Perfect



### 3. Hilt's 16 Star Arc Configuration (Long Neck)

Figure 3 has two images of 1797 \$2 ½ BD Reverse A. This is an example of Hilt's 16 Star Arc configuration. The image on the right has two arcs superimposed on top of the stars. The circled star is too low in the lower arc. The eagle has a long neck.

Hilt's 16 Star Arc configuration occurs on 4 reverse dies. There are no dies with this star configuration that have major anomalies.

**In my opinion, the 16 Star Arc configuration was an experiment.**



**Figure 3: 16 Star Arc Config - 1797 \$2 1/2 BD Rev A**

### 4. Hilt's 1<sup>st</sup> 13 Star Arc Configuration (Short & Long Neck)

Figure 4-A has two images of 1797 \$10 BD Reverse B. Note that the eagle has a short neck. This is an example of Hilt's 1<sup>st</sup> 13 Star Arc configuration. On dies with Hilt's 1<sup>st</sup> 13 Star Arc configuration, the lower left star is to the left and away from the eagle's beak.



**Figure 4-A: 1<sup>st</sup> 13 Star Arc Config - 1797 \$10 BD Rev B**



Figure 4-B has two images of 1798 \$5 BD Reverse C. This is a different example of Hilt's 1<sup>st</sup> 13 Star Arc configuration. Here the eagle has a long neck. Although the lower left star is below the eagle's beak, it is to the left and away from the eagle's beak.



**Figure 4-B: 1<sup>st</sup> 13 Star Arc Config - 1798 \$5 BD Rev C**

The change from 16 reverse stars to 13 reverse stars made the space surrounding the eagle's head look less cluttered. The stars could be spaced further apart, making the arcs look more elongated. Compare Figures 4-A and 4-B to Figure 3.

Hilt's 1<sup>st</sup> 13 Star Arc configuration occurs on 12 reverse dies with 13 stars. There is a 13<sup>th</sup> die, 1798 \$5 Reverse B (used to create 1798 \$5 BD-3) that has 14 stars surrounding the eagle's head. See Figure 4-C. This reverse die conforms to Hilt's 13 Star Arc configuration, except that it has 14 stars. The 14<sup>th</sup> star was added by mistake. Had 14 stars been added by design, more reverse dies with 14 stars would be known.

**In my opinion, Hilt's 1<sup>st</sup> 13 Star Arc configuration was an experiment.**



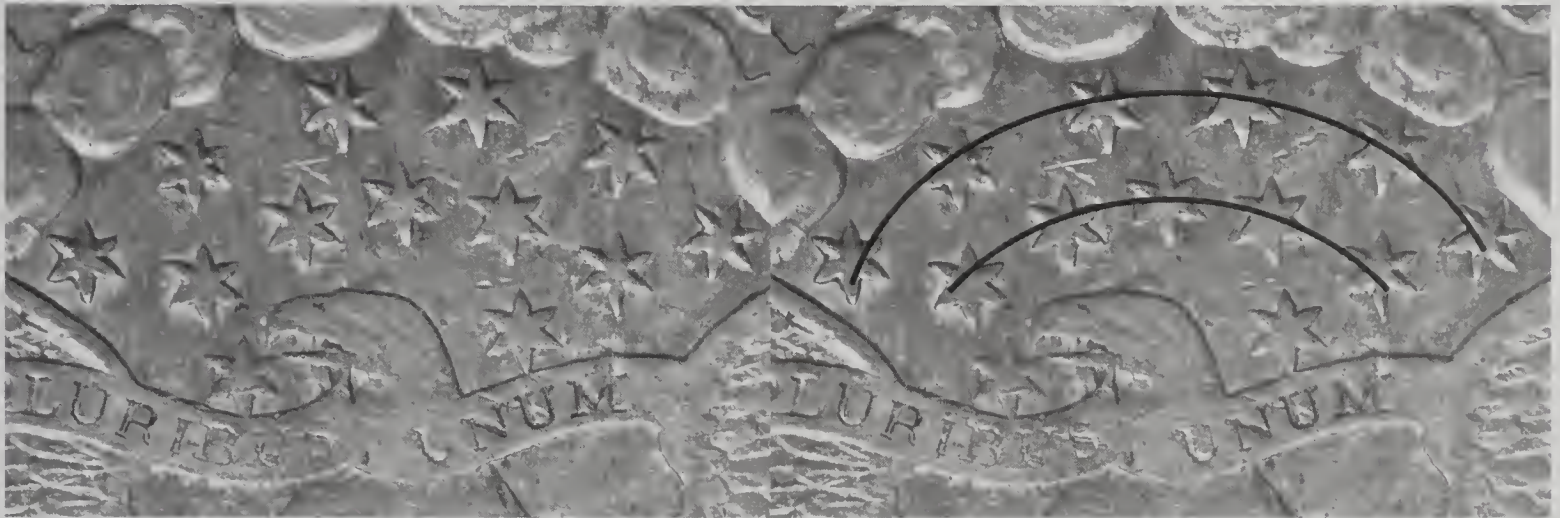
**Figure 4-C: 1<sup>st</sup> 13 Star Arc - 1798 \$5 BD Rev B - 14 Stars**

### 5. Hilt's 2<sup>nd</sup> 13 Star Arc Configuration (Short & Long Neck)

Figure 5-A has two images of 1798 \$1 B-8 BB-125. This is an example of Hilt's 2<sup>nd</sup> 13 Star Arc configuration. On all dies with Hilt's 2<sup>nd</sup> 13 Star Arc configuration, the lower left star is directly



below and either close to or touching the eagle's beak. As Hilt stated, "the eagle appears to be taking a bite out of the star". Note that the eagle has a short neck.



**Figure 5-A: 2<sup>nd</sup> 13 Star Arc Config - 1798 \$1 BB Rev U**

Hilt's 2<sup>nd</sup> 13 Star Arc configuration occurs on 141 of the 179 Heraldic Eagle reverse dies. This was clearly the Mint's preferred reverse star configuration. Of these 141 reverse dies, there is only 1 reverse die that has a long neck. That is 1799 \$5 Reverse A. See Figure 5-B. Note that the lower left star is below and close to the eagle's beak.



**Figure 5-B: 2<sup>nd</sup> 13 Star Arc Config - 1799 \$5 BD Rev A**

## **6. Hilt's 13 Star Cross Configuration (Short & Long Neck)**

Figure 6-A has two images of 1798 \$10 BD Reverse G. There are 13 stars and the eagle has a long neck. This specific reverse is the one that Hilt used in Die Varieties Of Early United States Coins to describe his Cross configuration. Note that the lower left star is below and close to the eagle's beak.



Hilt believed that the star configuration surrounding the eagle's head on The Great Seal of the United States was rotated 30 degrees clockwise, and that the resulting configuration was added to the Heraldic Eagle coin dies. On page 69 of Die Varieties Of Early United States Coins, Hilt stated "To place the cross design above the eagle required the modification of relocating a number of stars because of interference from the eagle head and wings". If Hilt is correct, then 5 of the 13 stars had to be relocated. Personally, I don't buy it.

I have no way of proving that a rotated and modified Great Seal star configuration became the Cross configuration. What I do believe, is what I see. In the image on the left in Figure 6-A, parallel lines are added to highlight a crisscross, or cross configuration. Note that the circled star is out of alignment. With different lines superimposed, the image on the right looks like military Corporal stripes.



**Figure 6-A – 13 Star Cross Config - 1798 \$5 BD Rev G**

Figure 6-B has two images of 1798 Dime Reverse B. There are 13 stars, however the eagle has a short neck. With lines superimposed, the configuration is identical to that in Figure 6-A. The image on the left identifies a crisscross configuration and the image on the right looks like military Corporal stripes. Note that the lower left star is below and touching the eagle's beak.



**Figure 6-B – 13 Star Cross Config - 1798 10C Rev B**



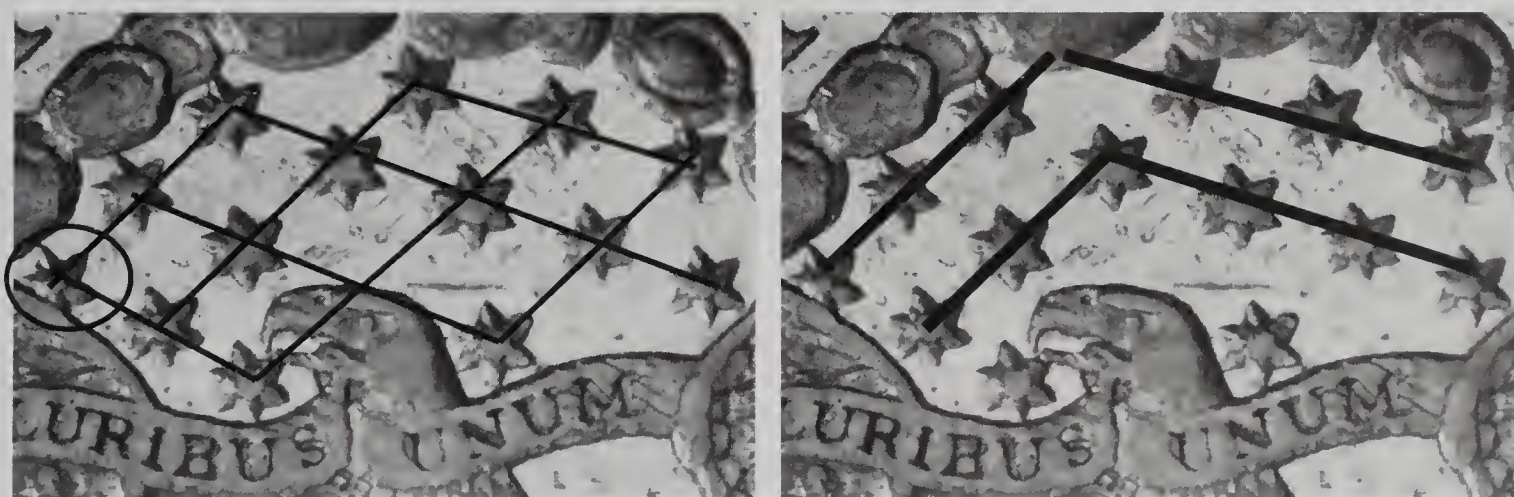
Figure 6-C has two images of 1798 Dime Reverse C. There are 13 stars, and the eagle has a short neck. With lines superimposed, the configuration is identical to that in Figures 6-A and 6-B. The circles identify those stars that are out of alignment.

In Early United States Dimes, 1796-1837, the authors stated that 1798 Dime Reverse C has “13 stars in curved rows”. In my opinion, the authors were incorrect in their assessment. The stars are arranged in Hilt’s 13 Star Cross configuration.



**Figure 6-C – 13 Star Cross Config - 1798 10C Rev C**

Figure 6-D has two images of 1804 \$2 ½ BD Reverse A. This is a fourth example of Hilt’s 13 Star Cross configuration, however there are 14 stars. With lines superimposed, the configurations are identical to those in Figures 6-A, 6-B and 6-C. In my opinion, the 14<sup>th</sup> star was added by mistake. This is the only reverse die with 14 stars that conforms to Hilt’s 13 Star Cross configuration. Note that the circled star is embedded in the eagle’s right wing (your left).



**Figure 6-D – 14 Star Cross Config – 1804 \$2 ½ BD Rev A**

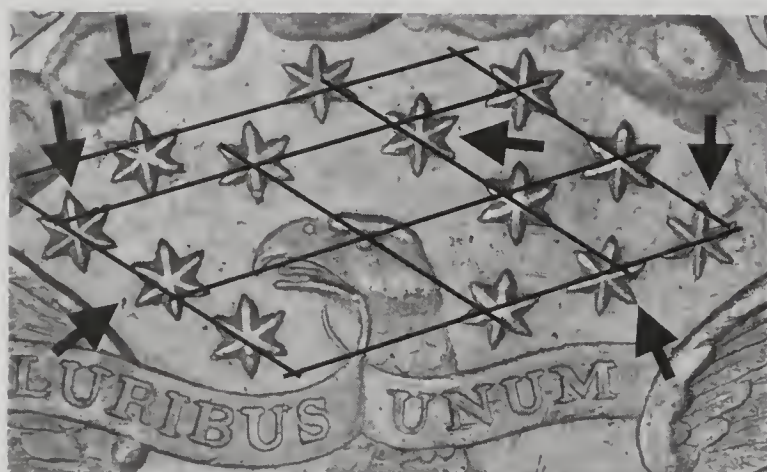
Hilt’s 13 Star Cross configuration occurs on 15 reverse dies with 13 stars and 1 reverse die with 14 stars.

In my opinion, the 13 Star Cross configuration was an experiment.

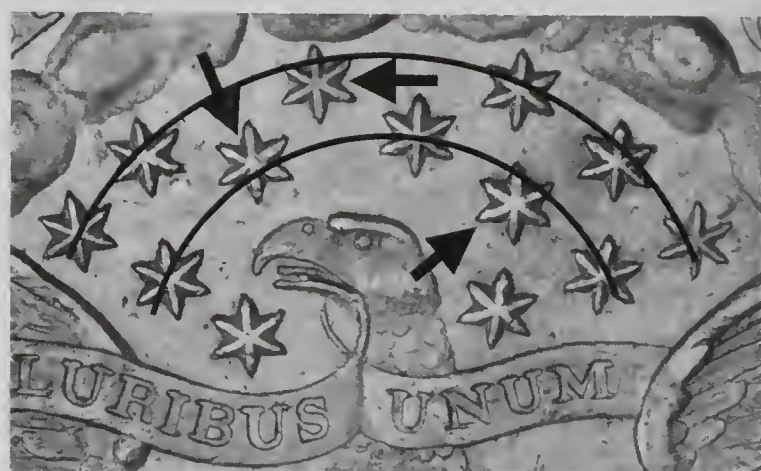


### 7. 13 Star Arc/Cross Configuration (Long Neck)

Figure 7-A has two images of 1797 \$10 BD Reverse A. Figure 7-B has two images of 1797 \$10 BD Reverse C. Each reverse has 13 stars and the eagle has a long neck. Hilt grouped this configuration into his Cross configuration. In my opinion, it is a different configuration. Although crisscross configurations are visible in the images on the left, the Corporal stripes are not visible in the images on the right. Instead, the images on the right are arc configurations.



**Figure 7-A – Arc/Cross Config - 1797 \$10 BD Rev A**



**Figure 7-B – Arc/Cross Config - 1797 \$10 BD Rev C**

I am naming this configuration the 13 Star Arc/Cross configuration. This configuration occurs on only these 2 reverse dies. The arrows point to those stars that are out of alignment. Here lies my dilemma.

1. There are too many stars out of alignment regardless as to which configuration you are trying to visualize.

2. The crisscross and arc configurations are too easily seen, therefore I do not believe that the 13 Star Arc/Cross Configuration was “randomly made” or “made by mistake”.
3. The cross configurations are similar to Hilt’s 13 Star Cross configuration.
4. Since the lower left star is **below** and **close** to the eagle’s beak, the arc configurations on these dies conform to Hilt’s 2<sup>nd</sup> 13 Star Arc configuration (and not Hilt’s 1<sup>st</sup> 13 Star Arc configuration). None of the 141 reverse dies that conform to Hilt’s 2<sup>nd</sup> 13 Star Arc configuration have a star configuration that remotely looks like the crisscross configurations in Figures 7-A and 7-B.
5. The 13 Star Arc/Cross configuration was only used with 1797 dated head dies. Hilt’s 13 Star Cross and Hilt’s 2<sup>nd</sup> 13 Star Arc configurations were first used with 1798 dated head dies. Since the date of the head die does not always correspond to the year that the reverse die was made, I cannot state with certainty that the 13 Star Arc/Cross configuration was developed before Hilt’s 13 Star Cross and Hilt’s 2<sup>nd</sup> 13 Star Arc configurations. It is, however, starting to look that way.
6. Let’s look at this another way. Is it possible that these 13 Star Arc/Cross \$10 Eagle reverses, although used with 1797 dated head dies, were struck during 1798? I do not think so. There are only 2 known 1798 dated \$10 Eagle head dies. Both head dies are actually 1798/7 overdated dies. Why would the Mint overdate two 1797 \$10 Eagle head dies to 1798/7 and use them in 1798, then use two other 1797 dated \$10 Eagle dies in 1798 without overdating them? That does not make sense. In my opinion, the 2 reverse dies with the 13 Star Arc/Cross Configuration were used in 1797.
7. The placement of the stars, such that they are in both crisscross and arc configurations, is very complex and requires extreme precision. Based on the superimposed lines and arcs in Figures 7-A and 7-B, some of the stars were not punched where they should have been. This implies that the design was probably too complex to implement.

In my opinion, the 13 Star Arc/Cross configuration was created by design, however, **the configuration was an experiment**. Since the placement of the stars to create this configuration was too precise and left minimal room for error, it was quickly abandoned.



## Which Came First – The Cross Or The Arc?

In Chapter VI of Die Varieties Of Early United States Coins, Robert Hilt included delivery warrants, his emission order sequences and die linkage charts, and pictures of the obverses and reverses for 1795 through 1798 dated Eagles. He also theorized as to which engraver created which die. Based on his data, Hilt determined that his 13 Star Cross configuration was developed and used in 1797 before his 1<sup>st</sup> 13 Star Arc configuration in 1798. Unfortunately, Robert Hilt's chapter on Eagles has errors.

1. 1797 \$10 BD-3 is a relatively common die marriage for Eagles. It was assigned an R-5 rarity rating in the BD reference. Hilt did not document this die marriage in his reference, although he plated both the obverse and reverse (Obverse 6 Reverse G).
2. On pages 87 and 89 of his reference, Hilt identifies a die marriage comprised of his 1798/7 Obverse 7 and Reverse F. As far as I can tell, this die marriage does not exist. This die marriage is not documented in the BD reference, and I cannot locate images of any Eagle that was auctioned with this die pairing. I believe that Hilt erred in his reference. The correct Hilt die marriage should be 7-G (and is equivalent to 1798/7 \$10 BD-1).
3. Hilt labeled the star configurations on the 3 reverse Eagle dies used with 1797 dated head dies as Cross, Cross and Cross. In my opinion, they are actually 13 Star Arc/Cross (see Figure 7-A), 1<sup>st</sup> 13 Star Arc (See Figure 4-A), and 13 Star Arc/Cross (see Figure 7-B).
4. There are 5 known Eagle die marriages dated 1797 and 1798. Hilt got 2 of the die marriages wrong. He also labeled the 3 star configurations used with 1797 dated head dies incorrectly. As a result, his data was bad, and his conclusions were based on bad data.
5. With limited data available, it appears that Hilt's 1<sup>st</sup> 13 Star Arc configuration was developed and used (in 1797) before Hilt's 13 Star Cross configuration (in 1798). This is Hilt's conclusion reversed!!! Note that it is possible that these configurations were developed around the same time. This subject will be revisited in a future article after more data is compiled about the other reverse design elements.



**Reverse Star Configurations By Denomination: 1796 - 1798**

Refer to Table 2 for the reverse star configurations of the dies used to strike 1796 through 1798 dated silver and gold coins. Note that the column for Quarters is omitted as only 1 Small Eagle reverse die was used in 1796.

The keys to interpreting the table are as follows:

- 1Arc13 = Hilt's 1<sup>st</sup> 13 Star Arc configuration
- 1Arc14 = Hilt's 1<sup>st</sup> 13 Star Arc configuration with 14 reverse stars
- Arc16 = Hilt's 16 Star Arc configuration
- ArcRan16 = 16 Star Arc/Random configuration
- ArcX13 = 13 Star Arc/Cross configuration
- Ran16 = 16 Star Random configuration
- X13 = Hilt's 13 Star Cross configuration
- (L) = the eagle has a long neck.
- (S) = the eagle has a short neck.
- SE = the specific die is a Small Eagle reverse.
- or \*\* = these Dime and Quarter Eagle dies are the same die.
- If the specific lettered die does not exist for the year, the entry is left blank.

Keep in mind that:

- Reverse dies were named by the authors of the various die marriage references.
- The date of the reverse die corresponds to the date of the head die that it was first paired with. This may not be the year that the reverse die was created.
- The reverse die letters for the gold coins are from the BD reference (and not Hilt).
- Reverse dies that were used in multiple years are included in the table only once. For example, the reverse die for 1798/7 \$10 BD-1 and 1798/7 \$10 BD-2 is 1797 \$10 BD Reverse B, therefore there are no 1798 \$10 reverse dies in the table.

**Table 2: 1796-1798 Reverse Star Configurations**

Rev	½ D	10 C	1 D	\$2 ½ G	\$5 G	\$10 G
1796 A	SE	SE	SE	Arc16(L)	SE	SE
B	SE	SE	SE	Arc16(L)		
C		SE		ArcRan16(L)		
D		SE				
E		SE				
1797 A		SE	SE	Arc16(L)*	SE	ArcX13(L)
B			SE		SE	1Arc13(S)
C	SE		SE		SE	ArcX13(L)
D	SE				Ran16(L)	
E	SE					
1795 J					ArcRan16(L)	
1795 K					Arc16(L)	
1798 A		Arc16 (L)*	SE	1Arc13(S)	X13(L)	
B		X13(S)	SE	2Arc13(S)**	1Arc14(L)	
C		X13(S)	X13(S)		1Arc13(L)	
D		2Arc13 (S)**	X13(S)		X13(L)	
E			1Arc13(S)		1Arc13(L)	
F			X13(S)		X13(L)	
G			1Arc13(S)		X13(L)	
H			1Arc13(S)			
I			1Arc13(S)			
J			1Arc13(S)			
K			1Arc13(S)			
L			X13(S)			
M			X13(S)			
N			2Arc13(S)			
O			2Arc13(S)			
P			1Arc13(S)			
Q			X13(S)			
R			1Arc13(S)			
S			X13(S)			
T			X13(S)			
U			2Arc13(S)			



My observations from the data in Table 2 are as follows:

1. If only 4 of the 7 attempts to implement a 16 Star Arc Configuration appeared successful to me, then 4 of the 7 attempts probably appeared successful to Mint personnel in 1796 and 1797. I therefore conclude that Mint engravers had trouble implementing 16 star reverses.
2. As a result of (1) above, the 16 star configurations were quickly replaced with 13 star configurations. By looking at the table, the highlighted cells, and the arrows, there seems to be a logical progression from the 16 Star Arc configurations (1796) to Hilt's 1<sup>st</sup> 13 Star Arc configuration (1797) to Hilt's 2<sup>nd</sup> 13 Star Arc configuration (1798). Likewise, the 13 Star Arc/Cross configuration (1797) was the predecessor of the 13 Star Cross configuration (1798).
3. One surprising observation is that the Dollars were used to prototype the configurations on a short neck eagle, and the Half Eagles were used to prototype the configurations on a long neck eagle. We will probably never know if this was done by design or if it was a random occurrence.
4. Not only did Mint engravers have issues with 16 star reverse dies, they had issues with 16 star head dies. They developed 5 different 16 star head die configurations (8 X 8, 9 X 7, 10 X 6, 11 X 5 and 12 X 4). The Mint began the transition from 16 star head dies to 13 star head dies in 1797, and by 1798, all head dies had 13 stars. Hey!!! The same thing occurred with the reverses!!!
5. Previous evaluation of 1795 \$5 Reverses J and K has suggested that they were probably used during 1797 or a later year. All 16 star reverse dies that were used with 1798 dated head dies were reused dies. Since 1795 \$5 Reverse J and K have 16 stars, it seems more likely (to me) that they were first used during 1797; hence their placement in the table prior to 1798. This subject will be revisited in a future article after more data is compiled about the other reverse design elements.

## **Conclusions**

The progression of the various reverse star configurations, as I ordered them, hopefully makes sense. Hopefully, also, their order is correct. What does not make sense (at this time) is Hilt's 13 Star Cross and 13 Star Arc/Cross configurations. These configurations are clearly enigmas with respect to their evolution and their placement on the timeline.

For the 16 Star Arc/Random, Hilt's 16 Star Arc, Hilt's 1<sup>st</sup> 13 Star Arc, Hilt's 2<sup>nd</sup> 13 Star Arc, and the 13 Star Arc/Cross configurations, the engraver(s) made attempts to place the stars of the lower arc in-between the stars of the upper arc. This did not always work out to plan. Sometimes stars were too high, too low, too close, too far way, too far left, or too far right.

During the early years of the Heraldic Eagle production, the thought was there, but many times the implementation failed slightly. In later years, as more dies were made, the repetition of implementing the various arc configurations resulted in improved engraving skills. Eventually, perfect arc configurations, with the stars of the lower arc in-between the stars of the upper arc became the norm.

To be continued...

### Notes

1. In late 1794 / early 1795, Robert Scot responded to questions posed "from the Committee appointed to examine and report on the state of the mint". This handwritten document resides in the National Archives. What numismatists refer to today as "Master Die", Robert Scot referred to as "Original Die". "Hub" was spelled "Hubb". "Working Die" was referred to as "Coining Die" or "Die To Strike Money". "Obverse Die" was referred to as "Head Die".

### References

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3. Early United States Dimes 1796-1837, David J. Davis, Russell J. Logan, Allen F. Lovejoy, John W. McCloskey, William L. Subjack.
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# **A Methodology For Counting Azure Lines**

**David Finkelstein**

The following is part of the blazon for The Great Seal of the United States, as adopted by the Continental Congress on June 20, 1782:

“Arms

Paleways of thirteen pieces Argent and Gules: a Chief, Azure. The Escutcheon on the breast of the American bald Eagle displayed, proper, holding in his dexter talon an Olive branch, and in his sinister a bundle of 13 arrows, all proper, & in his beak a scroll, inscribed with this Motto: “E pluribus unum”.-

The above description was no doubt used as a guideline for the Heraldic Eagle reverse. This article focuses on only one part of that description; the “Chief, Azure”. In order to understand what these two words mean, a brief overview of Heraldry is required.

The art of Heraldry was developed in the early 12<sup>th</sup> century in England. It was used to describe both coats of arms and seals. The first printed book on Heraldry was written in the mid 14<sup>th</sup> century by Bartolus de Saxoferrato, and was titled “De Insigniis et Armis”. Heraldry soon developed into a profession, as specialists, fluent in the art of Heraldry, developed the blazons (or descriptions) for coats of arms and seals.

The central element of a coat of arms is the escutcheon (or shield). A charge is a device or emblem that is placed over the field (or background) of the shield. One charge of the escutcheon (or one device of the shield) is the chief. The chief is a band that runs horizontally across the top of the shield. Chiefs have tinctures (or colors). One tincture is azure. Azure (or blue) is depicted as a region of horizontal lines.

The “Chief, Azure” is therefore horizontal lines at the top of the shield. All numismatic references identify these lines as “azure lines”. I have analyzed the azure lines on all Heraldic Eagle silver and gold coins and have identified two types; “complete azure lines” and “azure line segments”.

- Complete azure lines start at the left shield border and end at the right shield border. They do not touch or merge into the top border of the shield or the overhanging eagle breast feathers.
- Azure line segments are above the complete azure lines. These line segments touch or merge into the top border of the shield or the overhanging eagle breast feathers. The azure line segments are in the 3 triangular apexes of the shield.

When viewing the coin, the apex to the viewer’s left is Apex 1, the middle apex is Apex 2, and the apex to the viewer’s right is Apex 3. In Figure 1, there are 12 complete azure lines, 2 azure

line segments in Apex 1, 3 azure line segments in Apex 2, and 2 azure line segments in Apex 3. This is notated as 12-232. The number to the left of the dash is the complete azure line count. The 3 digits to the right of the dash are the number of azure line segments in Apex 1, Apex 2, and Apex 3.

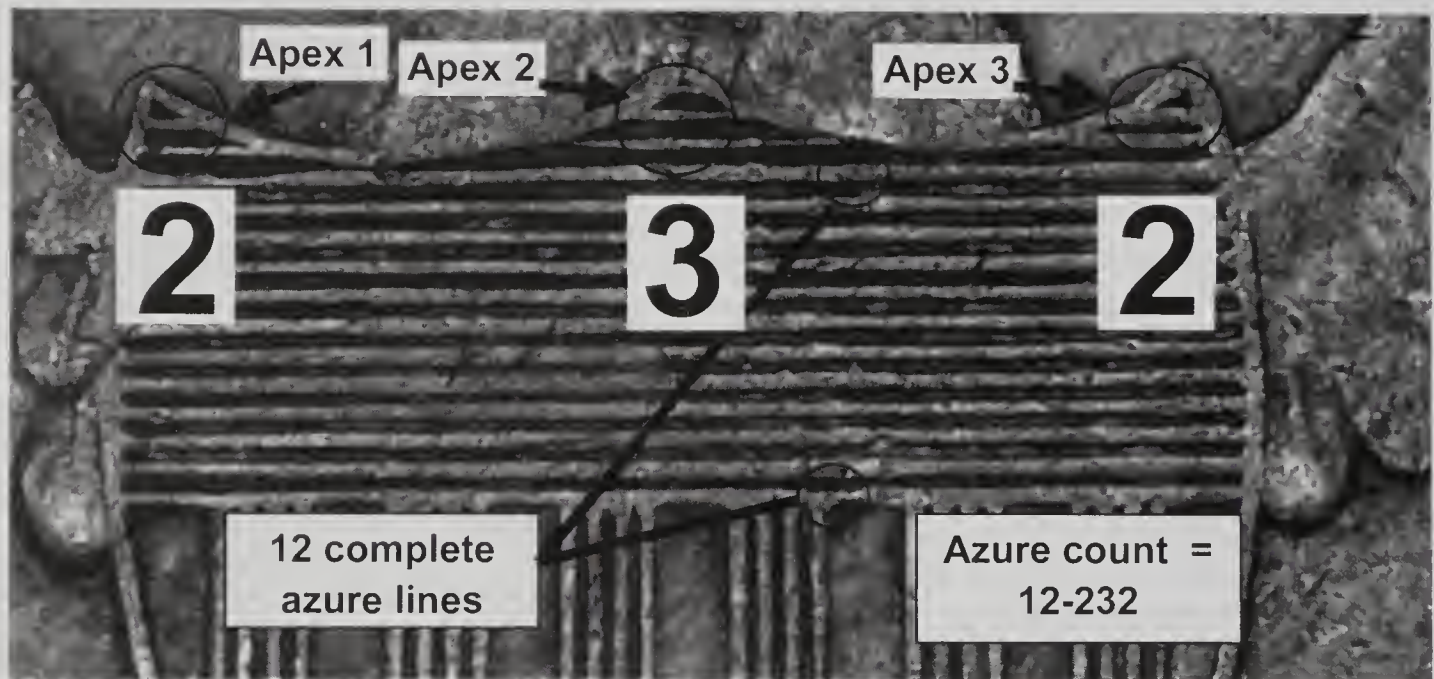


Figure 1 - 1799 \$1 BB Reverse A

The azure count in Figure 2 is 10-424. There are 10 complete azure lines. The 11<sup>th</sup> azure line (starting from the bottom) merges with the overhanging breast feathers, therefore it cannot be counted as a complete azure line.

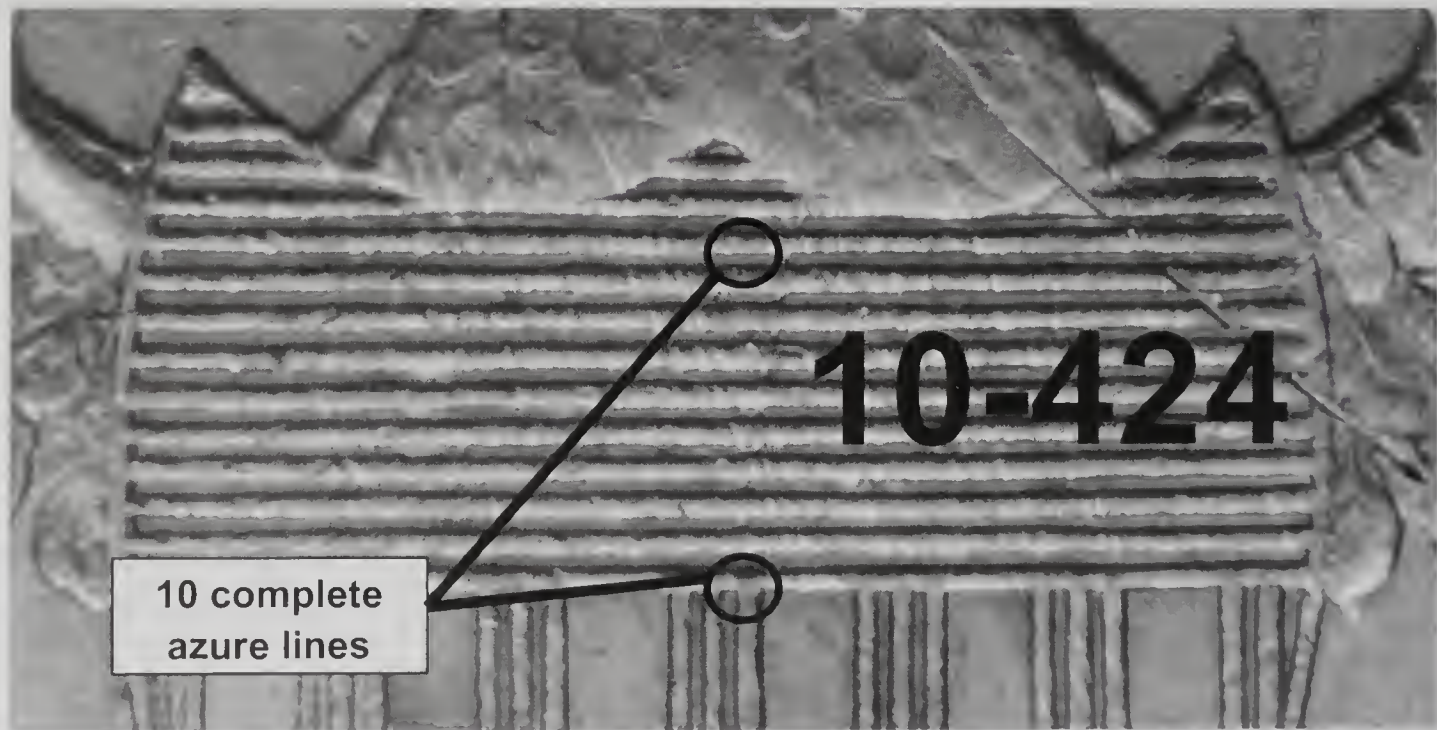


Figure 2 - 1797 \$10 BD Reverse C



Azure lines are raised on the coin, therefore they were incused into the coining die<sup>1</sup>. Were azure lines manually engraved into every coining die or were they on the Hubb<sup>1</sup>? If they did exist on the Hubb, then they were raised on the Hubb. Since raised devices cannot be added to the Hubb, they would have been incused into the Original Die<sup>1</sup> then transferred to the Hubb. So the correct question is, were the azure lines engraved into the Original Die or engraved into the coining die? I don't know. Is it possible that azure lines were sometimes engraved into the Original Die and sometimes engraved into the coining die? Good question. I don't know that either.

In order to answer the above questions, the complete azure lines and azure line segments will have to be counted on every known Heraldic Eagle reverse. In order to accurately count the complete azure lines and azure line segments, a counting methodology is required. Now that there is a counting methodology, counting the azures can begin.

To be continued...

## **Notes**

1. In late 1794 / early 1795, Robert Scot responded to questions posed "from the Committee appointed to examine and report on the state of the mint". This handwritten document resides in the National Archives. What numismatists refer to today as "Master Die", Robert Scot referred to as "Original Die". "Hub" was spelled "Hubb". "Working Die" was referred to as "Coining Die" or "Die To Strike Money". "Obverse Die" was referred to as "Head Die".

## **References**

1. The United States Early Silver Dollars from 1794-1803, M. H. Bolender.
2. Silver Dollars & Trade Dollars Of The United States, A Complete Encyclopedia, Volume One, Q. David Bowers & Mark Borckardt.
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# **R4 to R8 Capped Bust Half Dollar Census**

**Stephen J. Herrman**

This is the sixth installment of the R4 to R8 Capped Bust Half Dollar Census survey to be published in the **John Reich Journal**. The survey prior to this one appeared in May 2010 in Volume 20 / Issue 3. Earlier surveys may be found in Volume 18 / Issue 2, Volume 16 / Issue 1, Volume 12 / Issue 3, and Volume 8 / Issue 2.

The author notes that high quality specimens in all grades continue to become more elusive as more collectors discover this fascinating series. Overall prices realized in major auctions have moved strongly upwards in the past 12 months.

The rarity rating estimates used in this census report are based on the Bust Half Nut Club (BHNC) study published in Volume 16 / Issue 3 of the **John Reich Journal** in June 2005. 105 die marriages are currently estimated to be R4- or higher. The rarity rating estimates for three CBHD die marriages have been adjusted downwards due to the reported appearance of additional specimens. Specifically, 1817/4 O.102 was lowered to R7- (10 known), 1823 O.113 was lowered to R7- (10-11 known), and 1825 O.118 was lowered to R7+ (4 known).

This census report includes two main tables as follows:

The **R4 to R8 Capped Bust Half Dollar Census – Top 15 Collections** table presents the census of the top 15 collections submitted. The submitters' JRCS membership numbers included in the top row on each page serve to identify individual collections. Note that the total, average, and maximum grade columns include all coins from all submissions.

The **R4 to R8 Capped Bust Half Dollar Census By Grade** table presents the census of the top 15 coins for each variety, as graded by the submitters. Note that the total, average, and maximum grade columns include all coins from all submissions.

Following is a reference table listing the rarity rating levels used in this census report.

<u>Rating</u>	<u>Est Nbr</u>	<u>Rating</u>	<u>Est Nbr</u>	<u>Rating</u>	<u>Est Nbr</u>
R8	1-3	R6-	25-30	R4-	161-200
R7+	4-6	R5+	31-46	R3	301-500
R7	7-9	R5	47-63	R2	501-1000
R7-	10-12	R5-	64-80	R1	over 1000
R6+	13-18	R4+	81-120		
R6	19-24	R4	121-160		



## R4 to R8 Capped Bust Half Dollar Census – Top 15 Collections

YEAR	VAR	R.	275	1006	418	323	474	1087	189	461	739	951	019	824	978	049	510	TOT	AVG	MAX
1807	111	4+	55	20	50	40	40	45	15	53	45	25	12	15	35	20	30	46	27	55
1808	110	4+	60	40	53	50	53	40	40	53	45	25	20	40	53	25	20	48	30	60
1809	101	5	53	30	50	35	20	45	30	40	12	40	30	25	10	10	25	40	23	53
1809	104	5-	55	40	50	50	35	53	40	55	25	45	40	20	25	20	20	38	32	55
1809	108	4	50	40	30	45	45	45	45	50	45	20	20	15	35	30	35	47	29	50
1809	110	4+	55	40	50	40	40	45	40	63	12	25	25	15	35	15	20	46	29	63
1809	112	5-	58	35	53	48	40	30	30	55	25	12	25	30	20	15	25	43	28	58
1809	113	5	53	40	50	50	35	25	30	45	8	8	30	15	50	8	30	31	25	53
1809	114	5	55	25	40	50	30	30	25	45	15	30	20	20	30	10	12	42	23	55
1811	102	4	55	45	58	55	53	30	45	62	55	12	30	40	40	20	15	47	35	62
1811	107	4	63	53	58	61	53	35	40	58	40	35	35	40	25	35	15	45	40	63
1811	112	4-	63	63	58	50	61	58	40	55	35	45	40	25	45	30	30	61	37	63
1811	113	5	58	20	58	58	40	50	40	53	25	45	45	15	35	12	20	42	32	58
1812	101	5-	53	20	53	35	20	20	20	30	10	40	4		12			19	27	53
1813	102	4	62	55	58	60	53	50	35	58	35	40	20	45	35	20	40	50	40	62
1813	104	4	58	45	55	45	53	50	30	61	35	53	35	20	45	40	25	43	38	61
1814	106	4+	58	58	50	50	50	35	35	55	12	45	20	53	35	30	25	51	37	63
1817	102	7-	50	20	8													4	23	50
1817	104	6	58	45	30	50	40	12	4	50				15				11	35	58
1817	105	4-	53	45	58	45	45	40	35	58	40	30	40	15	45	45	30	57	35	62
1817	108	4	55	35	58	50	45	35	45	53	35	20	35	20	45	30	40	41	39	58
1818	110	4	58	55	63	45	45	40	45	63	25	20	35	20	35	40	20	44	40	63
1818	115	4+	58	40	45	53	50	40	30	55	35	30	35	35	45	15	30	50	35	58
1819	103	4	62	45	58	58	50	55	50	55	45	40	20	50	50	40	35	43	41	62
1819	106	4	53	50	58	50	55	55	35	55	45	30	30	8	55	40	15	37	36	58
1820	104	4+	62	50	55	45	55	58	40	55	25	45	15	35	40	20	40	50	37	62
1820	107	5	58	45	62	55	45	30	40	55	25	12	30	12	40	35	20	32	34	62
1822	102	4+	58	55	55	50	40	55	20	55	30	35	40	40	25	30	30	42	37	58
1822	103	5-	62	40	58	50	62	50	40	62	50	58	30	45	30	15	35	44	35	62
1822	112	4	55	40	50	55	62	50	40	53	30	40	30		40	35	35	37	40	62
1823	102	4	63	45	64	58	58	40	45	58	40	30	40	45	40	40	20	40	39	64
1823	109	5+	58	25	58	64	30	30	45	40	20	53	55	12	20	20	20	27	31	64
1823	113	7-	40	12	30	30	20	20										6	25	40
1824	102	5+	58	45	53	58	45	20	35	53	25	15	30	20	12	30	30	30	27	58
1824	112	4	61	50	53	55	50	50	50	55	50	35	35	45	50	40	35	44	40	61
1824	114	5-	58	30	62	45	40	40	40	53	15	12	40	30	50	25	8	40	31	62
1825	103	4-	65	40	61	45	53	58	50	58	45	35	20	40	30	40	40	46	39	65
1825	104	4+	67	53	55	61	63	53	40	55	20	53	45	53	40	40	20	40	39	67

# R4 to R8 Capped Bust Half Dollar Census

## R4 to R8 Capped Bust Half Dollar Census – Top 15 Collections

YEAR	VAR	R.	275	1006	418	323	474	1087	189	461	739	951	019	824	978	049	510	TOT	AVG	MAX
1825	109	5	63	64	64	63	55	40	35	55	20	35	25	40	15	20	15	46	33	64
1825	117	4	58	55	50	58	50	58	63	55	40	40	45	50	30	30	40	38	46	63
1825	118	7+	35	25														2	30	35
1826	103	5-	58	53	53	58	40	50	40	58	20	20	45	40	35	15	20	40	38	58
1826	114	4+	63	63	62	62	61	50	45	58	30	40	40	45	40	25	30	49	41	63
1826	115	5-	64	55	63	55	45	45	50	61	30	20	45	55	35	45	25	46	39	64
1826	119	4-	64	40	45	61	50	55	40	61	40	63	40	53	50	30	40	43	42	64
1826	120	4-	63	55	58	58	45	50	35	58	50	40	30	40	40	45	40	43	44	63
1827	103	4	64	35	63	62	53	55	40	58	40	50	40	40	45	35	20	41	40	64
1827	108	4-	63	55	50	62	58	55	40	62	50	45	40	55	35	35	30	45	44	63
1827	109	4-	63	45	53	58	62	58	40	63	50	45	40	45	35	40	20	44	43	63
1827	110	4-	63	53	53	62	50	53	45	58	35	40	40	55	40	40	30	44	42	63
1827	111	4	50	45	53	63	53	53	45	55	55	58	45	58	50	40	35	41	42	63
1827	113	4-	63	50	58	58	48	55	40	58	35	50	30	35	45	40	40	46	41	63
1827	116	4+	64	53	50	58	48	50	40	62	25	35	45	58	50	40	35	47	41	64
1827	122	5	58	45	55	58	40	45	35	64	8	35	25	25	10	15	25	37	31	64
1827	123	5-	58	45	58	55	45	45	45	62	30	58	40	35	25	25	35	47	37	62
1827	124	5+	58	45	62	50	50	50	50	40	30	30	40	30	12	50	30	36	34	62
1827	127	5	53	45	55	55	40	40	50	40	15	25	40	40	35	40	15	34	34	55
1827	128	4-	64	50	58	55	45	53	45	58	40	25	20	30	25	30	30	38	42	64
1827	129	4-	63	45	62	55	55	61	45	61	50	20	30	40	30	30	30	40	41	63
1827	138	4	63	53	55	53	55	53	53	58	53	53	40	20	55	40	30	44	39	63
1827	134	4	63	45	62	55	45	50	40	63	45	35	20	45	25	45	45	44	45	63
1827	136	4	63	40	40	55	53	55	53	58	55	53	15	55	53	30	15	42	44	64
1827	137	6	61	40	30	55	35	10	45	40	8		12	25				15	28	61
1827	138	4	64	25	53	58	53	55	40	58	53	35	45	58	25	30	45	43	42	64
1827	139	4-	55	45	58	62	45	50	55	58	50	53	35	45	40	25	50	48	42	62
1827	140	4+	58	45	53	63	55	58	40	62	45	40	40	25	45	30	30	50	38	63
1827	144	5+	58	45	53	50	40	45	30	58	45	35	40	45	35	12	25	31	33	58
1827	145	5	58	35	58	55	45	45	53	55	40	30	25	40	15	30	35	37	39	58
1827	147	4	64	45	62	45	62	58	40	58	45	45	35	45	20	40	25	44	39	64
1827	148	6+	45	45	15	10	40	40	40		45	4		35				11	30	45
1827	149	8	50			25												2	38	50
1828	105	5	62	45	58	55	48	50	58	55	35	25	35	55	45	30	30	30	40	62
1828	106	4+	63	53	50	62	50	53	40	55	55	40	45	30	45	35	40	36	41	63
1828	111	4	63	30	58	55	45	53	40	55	55	53	35	45	20	40	25	43	39	63
1828	123	5+	55	53	58	45	35	45	12	64	50	20	40	25	30	10	45	28	36	64
1829	106	5-	61	64	55	58	53	55	45	58	55	40	40	61	12	30	8	37	41	64



## R4 to R8 Capped Bust Half Dollar Census – Top 15 Collections

YEAR	VAR	R.	275	1006	418	323	474	1087	189	461	739	951	019	824	978	049	510	TOT	AVG	MAX
1829	109	4+	64	45	45	50	62	53	30	50	45	45	40	8	50	30	25	44	38	64
1829	118	4+	60	40	62	45	50	45	40	40	30	40	35	40	30	40	20	41	36	62
1829	120	8																		
1830	105	4	63	55	50	50	55	58	40	55	50	30	25	45	30	30	15	41	41	63
1830	112	4+	55	45	55	55	53	55	35	55	45	40	50	50	40	40	15	53	38	55
1830	114	5	62	40	63	45	45	35	25	62	8	35	35	35	10	15		31	33	63
1831	113	4	58	45	55	55	45	53	35	58	40	53	45	45	35	40	30	43	40	58
1831	115	4	62	45	58	50	64	50	53	58	55	40	30	55	35	25	30	42	42	64
1831	117	4	55	40	45	45	40	55	50	62	30	45	20	40	45	40	20	40	41	62
1831	120	6	63	50	12	30	10	25	25	53	6	15	20	20				17	25	63
1832	109	4	58	62	55	63	61	50	45	55	50	40	40	45	30	30	35	50	43	63
1832	114	4+	63	50	55	58	55	50	55	62	40	45	40	45	45	40	30	41	43	63
1832	117	4+	63	53	55	60	48	55	55	58	35	40	40	58	53	20	40	45	42	63
1832	119	4-	63	53	62	55	55	50	50	55	45	55	50	58	30	55	30	36	46	63
1832	123	7+	50	55														2	53	55
1833	111	4+	62	45	55	55	45	40	35	58	40	45	30	35	40	40	20	40	40	62
1833	115	5+	50	20	63	25	35	40	30	45	12	30	35	8	15	30		33	27	63
1833	116	7+	50															1	50	50
1834	118	4	62	58	53	58	55	58	45	58	45	58	35	55	45	40	40	42	45	62
1834	119	4	64	45	53	53	58	50	40	58	40	53	25	45	45	25	30	39	42	64
1834	120	4	63	50	55	50	55	50	50	58	55	40	58	40	30	45	25	45	46	63
1834	122	7+	64															1	64	64
1835	111	8	65															1	65	65
1836	103	4-	63	50	58	45	55	50	50	63	45	55	45		53	35	25	41	41	63
1836	105	4-	64	45	58	45	50	50	40	58	50	50	40	30	30	40	45	46	41	64
1836	107	4	62	55	50	55	62	55	45	58	45	45	20	40	30	40	30	48	38	64
1836	120	4-	62	53	55	55	55	58	55	58	45	40	40	40	40	40	40	47	43	62
1836	121	5+	55	40	45	55	30	50	25	50	40	53	30	25	12	12	25	31	31	55
1836	123	4	64	50	55	45	55	58	40	58	45	53	30	40	40	30	45	42	42	64
TOTAL VARS			104	100	98	98	97	97	96	95	95	94	94	93	92	91	89	3922	37.7	
AVG GRADE			58.9	44.5	52.9	51.7	47.7	46.4	40.1	55.6	36.2	37.3	33.6	36.5	34.9	30.8	28.5			

# R4 to R8 Capped Bust Half Dollar Census

## R4 to R8 Capped Bust Half Dollar Census by Grade

YEAR	VAR	R.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT	AVG	MAX
1807	111	4+	53	50	45	45	40	40	35	35	35	35	30	30	30	25	25	46	27	55
1808	110	4+	55	55	53	50	50	45	45	45	45	40	40	40	40	35	30	48	30	60
1809	101	5	50	45	40	40	40	35	30	30	25	25	20	20	20	15	15	40	23	53
1809	104	5-	55	53	53	48	45	45	40	40	40	35	35	30	25	25	25	38	32	55
1809	108	4	45	45	45	45	45	45	43	40	40	40	40	30	30	30	30	47	29	50
1809	110	4+	63	45	45	45	45	43	40	40	40	35	35	35	35	30	20	46	29	63
1809	112	5-	58	53	48	45	40	40	40	35	35	30	30	30	25	25	25	43	28	58
1809	113	5	50	50	45	40	40	35	30	30	30	25	25	20	15	12	10	31	25	53
1809	114	5	50	45	40	40	30	30	30	30	30	30	30	25	25	25	25	42	23	55
1811	102	4	62	58	58	55	55	55	53	45	43	40	40	40	40	40	40	47	35	62
1811	107	4	61	58	55	55	53	50	45	45	45	45	40	40	40	40	40	45	40	63
1811	112	4-	63	62	61	58	58	58	55	53	53	53	53	50	45	45	45	61	37	63
1811	113	5	58	58	45	45	45	43	40	40	40	35	35	35	35	25	25	42	32	58
1812	101	5-	50	45	40	40	40	30	30	25	20	20	20	15	12	10	10	19	27	53
1813	102	4	60	58	58	58	58	55	53	50	50	50	45	45	45	40	40	50	40	62
1813	104	4	61	53	53	50	50	50	50	45	45	45	45	45	40	40	40	43	38	61
1814	106	4+	62	55	50	50	50	50	50	45	45	45	40	40	40	40	40	51	37	63
1817	102	7-	20															4	23	50
1817	104	6	50	43	40	40	30	12										11	35	58
1817	105	4-	58	58	58	50	45	45	45	45	45	45	45	45	45	40	40	57	35	62
1817	108	4	58	58	53	50	50	50	45	45	45	40	40	40	35	35	35	41	39	58
1818	110	4	63	58	58	55	55	50	45	45	45	40	40	40	40	40	40	44	40	63
1818	115	4+	55	53	50	50	50	50	50	45	45	45	43	40	40	40	40	50	35	58
1819	103	4	58	58	55	55	55	55	55	53	53	50	50	45	45	45	45	43	41	62
1819	106	4	58	58	55	55	55	55	55	53	50	50	45	45	40	40	40	37	36	58
1820	104	4+	58	58	55	55	55	55	53	53	53	50	50	45	45	45	45	50	37	62
1820	107	5	61	55	53	50	40	45	45	40	40	35	35	30	30	30	30	32	30	62
1822	102	4+	55	55	50	50	50	45	45	45	45	45	45	40	40	40	40	42	37	58
1822	103	5-	62	62	50	50	50	50	50	40	45	45	45	40	40	40	35	44	35	62
1822	112	4	62	58	55	55	55	53	50	40	40	40	40	40	40	40	35	37	40	62
1823	102	4	62	50	50	50	50	50	45	45	45	43	40	40	40	40	40	40	30	64
1823	109	5+	64	55	55	50	45	45	30	30	25	25	25	25	25	25	20	27	31	64
1823	113	7-	30	20	25													6	25	40
1820	102	5+	58	50	53	45	40	40	35	30	30	30	30	25	20	20	20	30	27	58
1824	112	4	58	55	55	55	53	50	50	50	50	50	45	45	45	45	45	44	40	61
1824	114	5-	62	50	50	40	40	40	40	35	30	30	30	25	25	25	20	40	31	62
1825	103	4-	61	58	58	55	55	55	53	53	50	50	45	45	45	45	40	46	39	65
1825	104	4+	63	61	55	55	53	53	53	53	50	45	45	40	35	35	25	40	39	67



## R4 to R8 Capped Bust Half Dollar Census by Grade

YEAR	VAR	R.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT	AVG	MAX
1825	109	5	64	62	55	50	45	45	45	40	40	40	40	40	40	35	25	46	33	64
1825	117	4	63	58	58	58	55	55	53	50	50	50	50	50	48	45	40	38	46	63
1825	118	7+																2	30	35
1826	103	5-	58	58	58	50	45	45	45	45	45	40	40	40	40	35	35	40	38	58
1826	114	4+	63	62	61	55	53	53	53	53	50	50	50	50	50	45	45	49	41	63
1826	115	5-	63	61	55	55	50	45	45	45	45	45	45	45	40	40	40	46	39	64
1826	119	4-	63	61	58	55	53	50	50	45	45	45	42	40	40	40	40	43	42	64
1826	120	4-	58	58	58	55	55	55	50	50	50	50	50	45	45	45	45	43	44	63
1827	103	4	63	62	58	58	58	58	55	53	50	50	50	50	45	45	43	41	40	64
1827	108	4-	63	62	58	55	55	55	55	53	53	50	50	48	45	45	40	45	44	63
1827	109	4-	63	62	58	58	58	55	55	53	53	50	50	50	45	45	45	44	43	63
1827	110	4-	62	58	55	55	53	53	53	53	50	50	50	48	45	45	45	44	42	63
1827	111	4	63	58	58	58	55	55	55	53	53	50	50	50	45	45	45	41	42	63
1827	113	4-	61	58	55	55	55	50	50	50	50	48	45	45	45	45	45	46	41	63
1827	116	4+	62	58	58	55	55	53	50	50	50	50	50	50	50	50	48	47	41	64
1827	122	5	64	58	55	53	45	45	40	40	35	35	30	30	25	25	20	37	31	64
1827	123	5-	62	58	58	55	55	50	50	50	45	45	45	45	45	40	40	47	37	62
1827	124	5+	62	50	50	45	45	45	35	35	35	30	30	30	30	30	30	36	34	62
1827	127	5	58	40	40	40	40	40	40	40	35	35	30	30	30	25	25	34	34	55
1827	128	4-	58	58	58	55	53	50	50	50	50	50	45	45	40	40	40	38	42	64
1827	129	4-	62	61	58	55	55	55	55	53	50	50	45	45	45	45	45	40	41	63
1827	133	4	58	55	55	55	53	53	50	50	50	45	45	45	45	45	40	44	39	63
1827	134	4	62	58	55	55	55	55	50	50	48	45	45	45	45	45	45	44	45	63
1827	136	4	58	58	58	58	55	55	55	55	55	55	55	55	53	53	50	42	44	64
1827	137	6	55	43	40	35	25	12	10	10	8	4						15	28	61
1827	138	4	58	58	58	58	58	58	58	55	53	50	50	45	45	45	45	43	42	64
1827	139	4-	62	58	58	55	53	53	50	50	50	50	50	50	45	45	45	48	42	62
1827	140	4+	63	62	58	58	55	53	45	45	45	45	45	45	43	40	40	50	38	63
1827	144	5+	58	45	45	45	45	40	40	40	35	35	30	30	25	25	25	31	33	58
1827	145	5	58	55	50	50	50	45	45	45	40	40	40	40	40	35	35	37	39	58
1827	147	4	62	61	61	58	58	58	55	50	45	45	45	45	45	45	45	44	39	64
1827	148	6+	45	45	40	35	10	10										11	30	45
1827	149	8	25															2	38	50
1828	105	5	58	55	55	55	50	50	48	45	45	45	40	40	40	35	35	30	40	62
1828	106	4+	58	58	55	55	53	50	50	45	45	45	45	45	43	40	40	36	41	63
1828	111	4	55	55	55	53	50	50	50	45	45	45	43	40	40	40	35	43	39	63
1828	123	5+	64	58	53	50	50	45	45	40	40	40	40	35	30	25	20	28	36	64
1829	106	5-	64	60	58	58	55	55	53	50	45	45	45	45	40	40	35	37	41	64

R4 to R8 Capped Bust Half Dollar Census by Grade

YEAR	VAR	R.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOT	AVG	MAX
1829	109	4+	62	53	50	50	50	50	45	45	45	45	40	40	40	40	40	44	38	64
1829	118	4+	61	50	50	45	45	45	45	45	45	40	40	40	40	40	40	41	36	62
1829	120	8																		
1830	105	4	58	58	58	55	55	55	55	50	50	50	50	50	50	45	45	41	41	63
1830	112	4+	55	55	55	55	55	55	53	50	50	50	45	45	45	45	45	53	38	55
1830	114	5	58	50	45	45	45	40	40	40	40	35	35	35	35	35	35	31	33	63
1831	113	4	61	58	58	55	55	55	53	53	50	45	45	45	45	45	45	43	40	58
1831	115	4	58	58	58	55	55	55	55	55	53	53	50	50	45	45	45	42	42	64
1831	117	4	62	62	58	55	53	50	45	45	45	45	45	45	45	40	40	40	41	62
1831	120	6	50	50	30	30	25	25	20	20	18	15	10	6				17	25	63
1832	109	4	63	62	61	58	58	55	55	55	50	50	50	50	50	45	45	50	43	63
1832	114	4+	60	58	58	58	55	55	55	55	55	55	50	45	45	45	45	41	43	63
1832	117	4+	60	58	55	55	55	55	53	53	53	50	50	48	48	45	45	45	42	63
1832	119	4-	62	58	58	55	55	55	55	55	55	55	53	53	50	50	50	36	46	63
1832	123	7+	55															2	53	55
1833	111	4+	58	55	53	50	45	45	45	45	45	45	40	40	40	40	40	40	40	62
1833	115	5+	63	45	43	40	40	35	35	35	30	30	30	25	25	20	20	33	27	63
1833	116	7+																1	50	50
1834	118	4	58	58	58	58	58	58	58	55	55	53	50	50	48	45	45	42	45	62
1834	119	4	60	58	58	55	55	55	53	50	50	50	45	45	45	45	45	39	42	64
1834	120	4	58	58	58	55	55	55	55	55	55	53	53	50	50	50	50	45	46	63
1834	122	7+																1	64	64
1835	111	8																1	65	65
1836	103	4-	63	61	55	55	53	50	50	50	50	50	45	45	45	45	43	44	41	63
1836	105	4-	61	58	55	55	50	50	50	50	50	48	45	45	45	45	45	46	41	64
1836	107	4	62	61	58	55	55	50	50	45	45	45	45	40	40	40	40	48	38	64
1836	120	4-	62	61	61	58	55	55	55	55	53	53	50	50	45	45	45	47	43	62
1836	121	5+	55	50	50	50	48	45	45	45	40	40	40	30	25	25	20	31	31	55
1836	123	4	58	58	58	55	55	53	53	50	50	50	50	50	50	45	45	42	42	64
TOTAL VARS			104	101	98	98	97	97	96	96	96	96	96	94	94	94	94	3922	37.7	
AVG GRADE			60.5	57.2	56.1	54.4	53.5	52.1	50.9	49.5	48.4	47.0	45.8	45.7	44.5	43.7	42.9			





## **Double Struck 1837 \$2.50 with Two-Pale Gule Reverse**

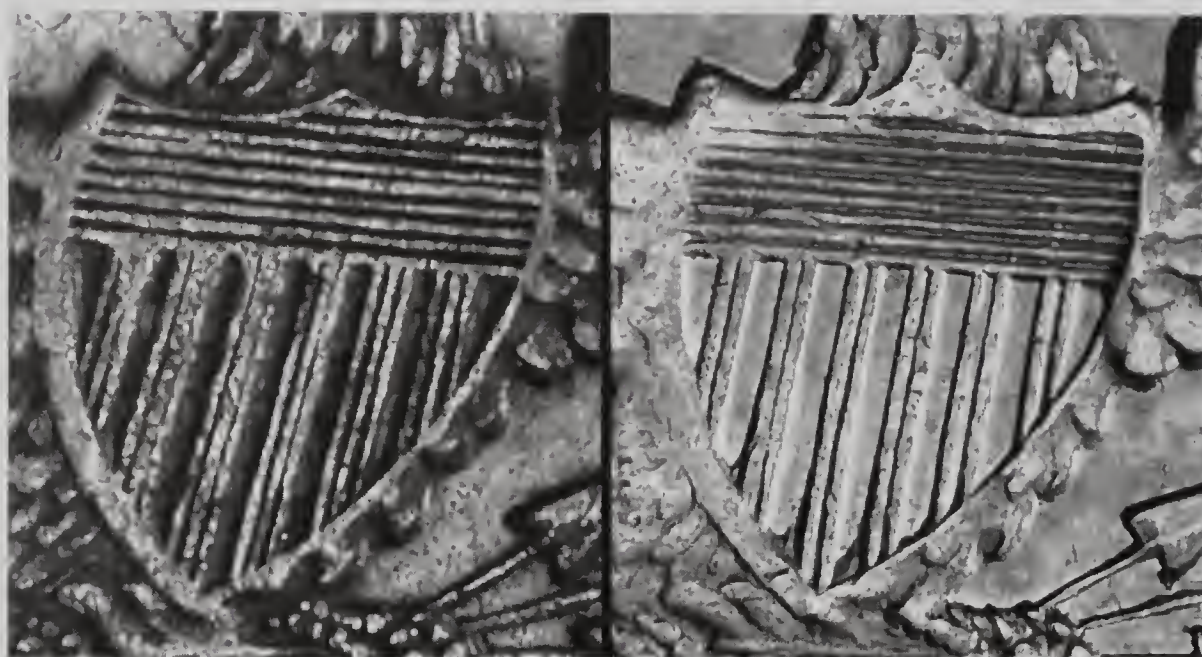
### **Eric M. Krauss**

I recently completed a set of the three die marriages of the 1837 quarter eagle by acquiring the variety with two-pale gule reverse. This specimen is of interest not only for its rarity (three specimens previously documented) but also because the obverse is double struck. I am unaware of any other multiple-strike errors in the Classic Head gold series.

Of the three known die marriages of the 1837 quarter eagle <sup>(1)</sup>, two are very rare, and collecting this set is challenging. The common variety, accounting for the vast majority of 1837's, pairs an obverse with the 7 high and nearly touching the hair curl with a reverse with three-pale gules in the shield and lowest arrowhead fused to the final A in AMERICA. It is listed as Variety 16 in Mark Borckardt's online guide published by Heritage Galleries <sup>(2)</sup>. This same reverse was used once before, with the 1834 "small head" quarter eagle.

A second die pairing shares its high-7 obverse with the common variety, but has a reverse with arrowheads well separated from the letters. It was discovered by John McCloskey in 1996 and published in the **John Reich Journal** in 2001 <sup>(1)</sup>. It is listed as Variety 17 by Borckardt <sup>(2)</sup> who traced only one other specimen. I obtained an example graded NGC-58 (lot 3574 in Bowers and Merena's June 2008 Baltimore auction) and a second well-worn piece through eBay. The reverse of this variety has a three-pale gule shield and was used on two other die marriages dated 1836 and all Philadelphia quarter eagles dated 1839.

The remaining variety differs in both obverse and reverse from the preceding. The 7 of the date is repunched and equidistant from the lower hair curl and dentils, and the reverse introduces, for the first time for the Classic Head series, a two-pale gule shield. It is listed as Variety 18 <sup>(2)</sup> and was previously known by three examples: a Proof specimen in the Smithsonian, a Proof specimen pedigreed to Eliasberg and sold as lot 94 in the Harry W. Bass Sale Part III in 2000, and a specimen with reverse graffiti sold as lot 4707 in Heritage's Auction 394 in January 2006. The transition from three-pale to two-pale gules may have been an effort to improve strike quality (1; see Figure 1). Of the eight Classic Head quarter eagle reverse dies used at the four mints in 1838 and 1839, all but one has a two-pale gule shield.



**Figure 1. Three-pale gule shield showing loss of definition of vertical elements (left) vs. two-pale gule shield (right).**

The present study coin was auctioned in New York City by Bonham's in December 2010, Sale 18404. The catalog description was as follows:

"Lot 2271. 1837 \$2.5. Clearly repunched 7 in date. The 1837 is a lower mintage issue and a coveted example of the Classic Head quarter eagle. This piece exhibits several marks and indentations as well as a few edge chips. Typical striking weakness is noted at the centers of each side. About uncirculated"

No information was provided about the coin's provenance.

An image of this piece is shown in Figure 2, and for comparison, an image of the Eliasberg/Bass proof specimen is shown in Figure 3. The obverse is double struck, most clearly on the date, stars, and dentils, and has a raised fin along the obverse edge from the 4 o'clock to 7 o'clock position measuring approximately 0.18 mm wide. The reverse has evidence of repair from mount removal, which does not significantly affect the devices, and no trace of doubling at all.





Figure 2. 1837 \$2.50, two-pale gule reverse, ex-Bonham's 12.2010, New York, lot 2271, double struck obverse.



Figure 3. 1837 \$2.50, two-pale gule reverse, ex-Eliasberg/Bass, image courtesy Heritage Galleries (ha.com).



Magnified views of the obverse devices are shown in Figure 4. The doubling of the 7 in the date is entirely different from the repunching of the 7 in previously known specimens of this die marriage. The stars are all double struck with the degree of doubling decreasing as one proceeds clockwise from S1 to S13. There is clear doubling of the dentils along the bottom, but not at the top of the coin, and small triangular indentations along the inner margin of the lower rim just below the dentils.



**Figure 4. Photomicrographs of the date, lower edge, and selected stars of the study coin.**

The coin measures 18.33 mm in diameter along the horizontal axis and 18.34 mm in diameter along the vertical axis. The reeding is complete with 114 edge reeds, identical to the other two 1837 die marriages, as shown in Figure 5. The lack of doubling on the reverse of the study coin, standard dimensions, and full reeding strongly suggest that it was struck twice while in collar, with the second strike of the obverse (hammer) die out of alignment with the first strike.





**Figure 5. The study coin in an edge mirror. There are 114 edge reeds.**

To estimate the degree of misalignment between the first and second strikes, I employed calibrated overlays of the Eliasberg/Bass obverse and followed the general method used by Jeff Reichenberger and Edgar Souders <sup>(3)</sup>. Northward translation of the second strike relative to the first was necessary to account for the presence of the rim fin and the degree of doubling of the dentils. However, translation alone failed to account for the apparent diminution of doubling as one proceeds from S1 to S13; some amount of die rotation is also necessary. After trying multiple possible combinations, I obtained a good fit to the features observed on the coin when the second strike is (i) rotated  $0.3^\circ$  clockwise and (ii) translated north by 0.18 mm. An image of the best-fit overlay is shown in Figure 6.



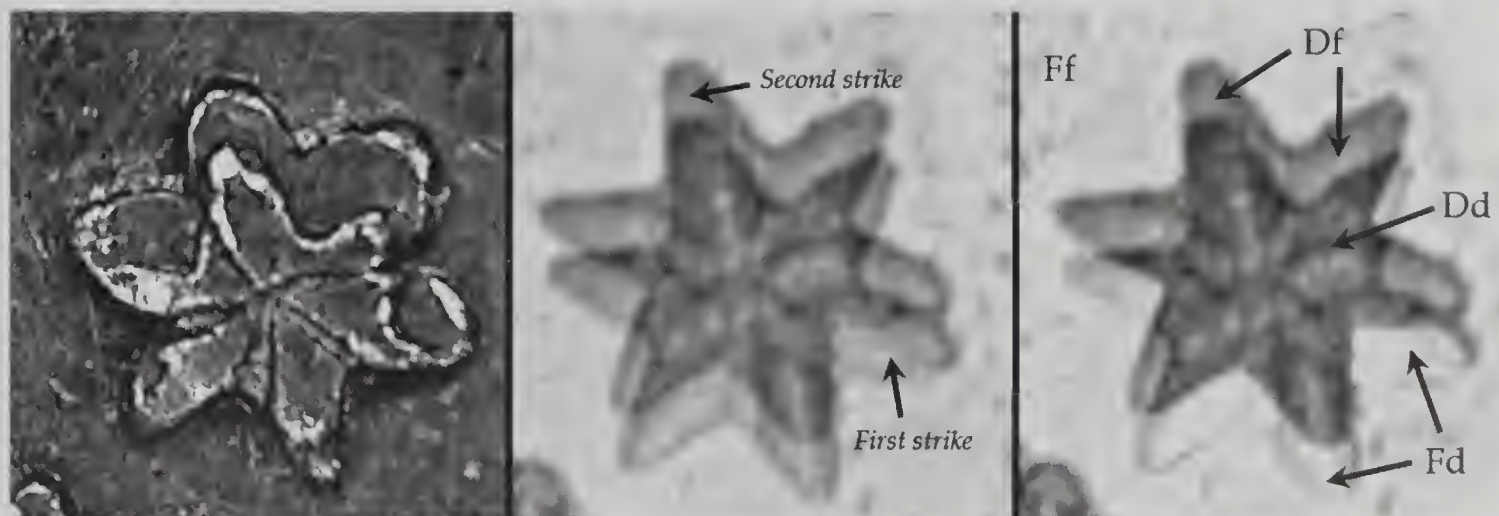
**Figure 6. Best fit overlay showing misalignment of second strike consisting of  $0.3^{\circ}$  clockwise rotation and 0.18 mm translation north.**

In the following diagrams, the appearance of the devices is reconstructed via digital filtering of the overlay. The following shorthand describes the 4 different strike possibilities for a misaligned second strike, where d denotes device and f denotes field:

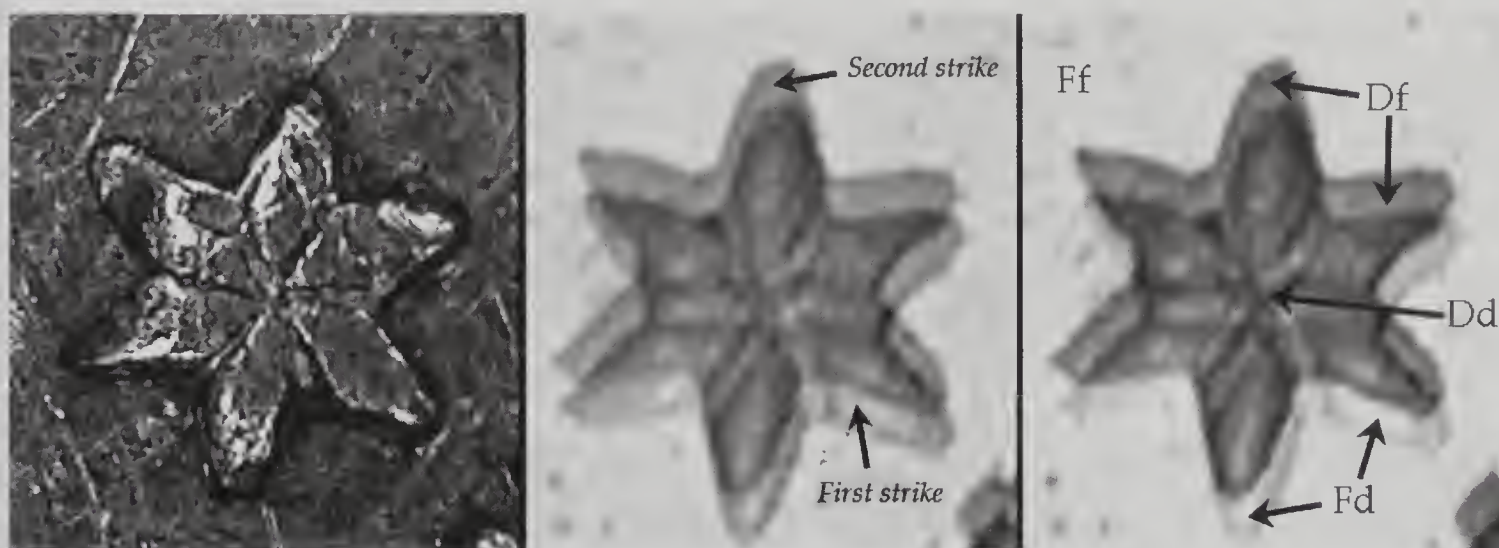
- Ff: F of die strikes f of struck coin; appears as flat field.
- Df: D of die strikes f of struck coin; device of the second strike observed in shallow relief, since the planchet was flattened by the first strike.
- Dd: D of die strikes d of struck coin; device of the second strike appears in high relief, but is cut off or clipped at the edges of the over-struck first-strike devices.
- Fd: F of die strikes d of the struck coin; device of the first strike appears as a faint shadow or is inapparent.

Figures 7, 8, and 9 compare the photomicrograph, best-fit overlay, and filtered overlay for S1, S13, and the date, respectively. Simulation of S1 and S13 is straightforward and reproduces the observed decrease in doubling around the obverse. The date, while more complex, is simulated reasonably well and shows the distinction between repunching of the digit 7 characteristic of this obverse die and the more dramatic strike doubling.





**Figure 7. Simulation of S1: Photomicrograph (left), best-fit overlay (center), filtered overlay (right).**



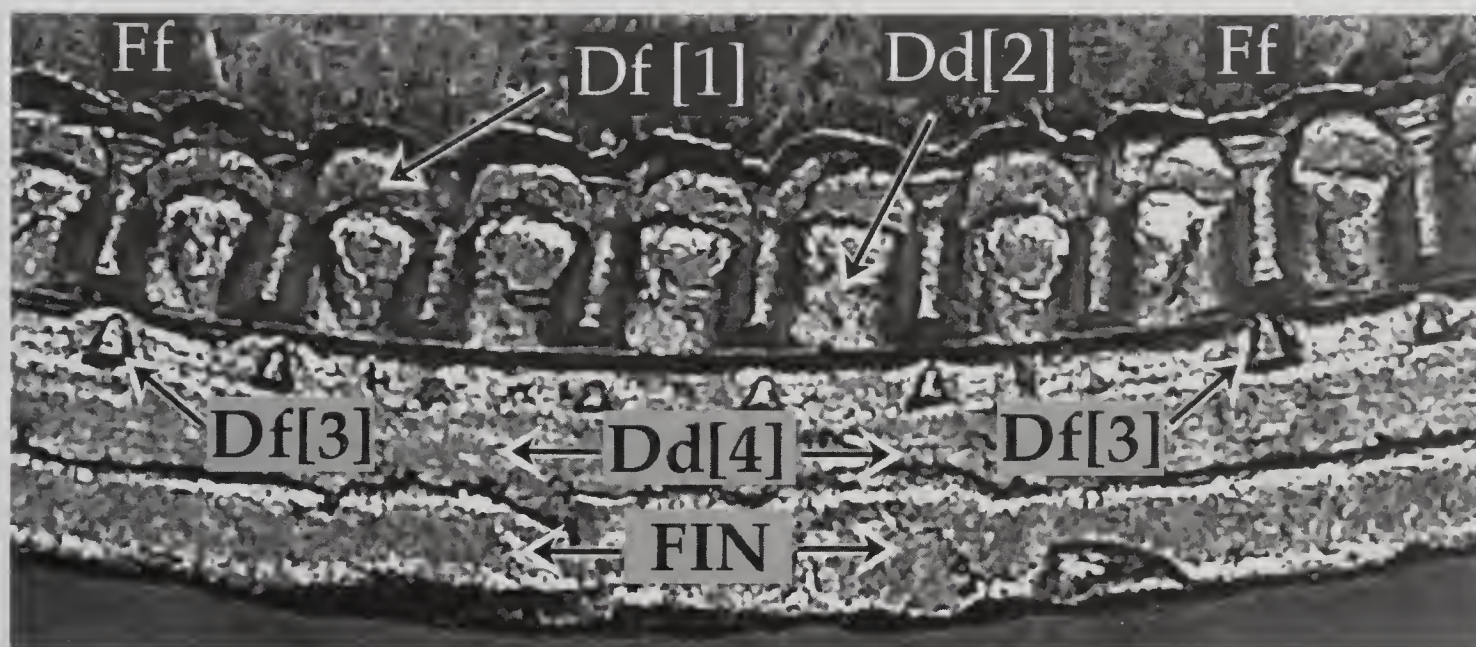
**Figure 8. Simulation of S13: Photomicrograph (left), best-fit overlay (center), filtered overlay (right).**



**Figure 9. Simulation of the date: Photomicrograph (center), best-fit overlay (top), filtered overlay (bottom). "R" indicates areas of obverse die repunching.**

The lower obverse rim is shown in Figure 10. The inner row of dentils in low relief are Df, and the outer row of dentils in high relief are Dd. The indented triangles just outside the outer row of dentils represent the lack of metal flow into the rim (strike #2) from the notches between the dentils (strike #1). The lack of doubling of the dentils along the upper edge of the coin (Figure 2) resulted from total obliteration of the first-strike dentils by the field area of the second strike (Fd).





**Figure 10. Enlarged view of the lower edge: Df[1], dentils struck over field area of first strike; Dd[2], dentils struck over dentils of first strike; Df[3], triangular depressions in the rim corresponding to grooves between dentils of first strike; Dd[4], rim zone for both strikes; FIN, extra area of rim raised by the second strike.**

On the portrait, doubling is best seen along the upper edge of the truncation where it joins the neck and along the upper edge of the hair curl between S8 and S9. The T of LIBERTY is repunched in the die, as is seen in all examples of this variety.

In conclusion, this is the fourth known specimen of the 1837 two-pale gule quarter eagle, a die marriage which may have been a Proof-only issue <sup>(1,2)</sup>. As such, it might have been intentionally struck twice to better raise the devices, and for unknown reasons the die alignment was not maintained between the first and second strikes; rather than consign the coin to the melting pot, mint officials chose to preserve it. Interestingly, the 1836 O-101 half dollar with double struck obverse recently presented in this journal <sup>(3)</sup> is also an example of one-sided double strike from a die marriage used for Proofs. Is this sort of error more likely with die marriages used for Proof strikings? Does anyone else know of other examples of multiple-strike Bust or Classic Head gold?

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- (2) Mark Borckardt, <http://coins.ha.com/s/d/cqedvg.pdf>. The die marriages for the entire Classic Head quarter eagle series are through-numbered from Variety 1 (1834) to Variety 28 (1839-O).
- (3) Jeff Reichenberger, "Fascinating 1836 Double Struck Half", John Reich Journal, Vol. 22 No. 1 (May 2012) p. 5.



# **An Edge Cud that Causes a “Rim Ding” Look on a Capped Bust Half Dollar**

**Henry R. Hilgard**

When an outer segment of a die breaks off and falls away, a coin struck from that die will have a raised area corresponding to the missing die segment. This unstruck and raised area on the coin is known as a cud. Occasionally the broken die segment remains more-or-less in place, especially if the die and its broken segment are from the lower (anvil) die where they are held together in a die cup<sup>1</sup>. In this case, a coin struck from the broken die will often exhibit a “retained cud” that consists of a slightly raised and displaced area that will still show some detail from the broken die segment.

Neither cuds nor retained cuds have been found on the obverses or reverses of the lettered-edge capped bust half dollars (1807-1836), although they are seen with some frequency on earlier half dollars, a difference that is attributable to advances in technology and die preparation. But it should be recalled that there were *four dies* that went into the making of a capped bust half dollar: the obverse die, the reverse die, and the 2 edge dies, one of which contributed the words FIFTY CENTS OR and the other the words HALF A DOLLAR to the edge. These edge dies did develop cuds.

A particularly dramatic edge cud can be found on some 1834-112 half dollars. Figures 1 and 2 show the reverse of a high-grade 1834 O-112 that at first glance appears to have a rim ding over the A in STATES at about 11 o'clock. However, a view including the edge (Figure 3) reveals that this is not a ding, but in fact an edge cud that developed between the L and the F of HALF on the edge. Another 1834-112 with a similar “rim ding” look is the plate coin in the 3rd and 4th editions of Overton<sup>2</sup>, but on the plate coin it is the obverse that is affected. Because the location of this cud is at the bottom of the word HALF, it only alters the look of the side of the coin that is next to the bottom of the edge lettering. And because the lettered edge planchets were fed into the coining chamber without regard to whether the letters were right side up or upside down, the “rim ding” look is equally likely to appear on the obverse or the reverse of a coin affected by this cud.

When a blank planchet intended for a bust half dollar was rotated through the edge lettering (Castaing) machine, the edge dies not only applied the letters but also squeezed the planchet so that its rims became raised and its diameter was reduced. But at the location of this cud, it didn't happen that way: the missing segment of the edge die that caused the cud couldn't squeeze the coin and therefore the planchet's rim next to the cud did not become raised and the planchet's diameter was not reduced in that area either. The result was that the rim ended up looking as if it had suffered damage, even though it hadn't.



**Figure 1.** Reverse of an 1834 O-112 half dollar showing the defect caused by an edge cud at about 11 o'clock.



**Figure 2.** Enlargement of the area of the reverse affected by the edge cud.



**Figure 3.** A view of the edge cud that altered the look of the coin.

Studies of unusual features on the edges of early U. S. coinage have led to important insights. For example, with regard to reeded edge bust coinage, an unusual doubled edge reed was critical to William J. Subjack's identification of a unique collar die that was used on four dime marriages (1821 JR-10, 1823 JR-1, 1823 JR-3 and 1824 JR-1)<sup>3</sup>. Subjack found that the doubled edge reed imparted by this collar die always appeared in the same location in relation to the arrowheads on the reverses of these dimes, thereby providing strong evidence for his conclusion that the dimes received their reeding from the collar die *at the same time* that the coins were being struck in the screw press. And it was also through the study of the edges of mint errors (off centers and double strikes) that Russell J. Logan was able to extend Subjack's



conclusion to other dates of bust dimes and to other series of reeded edge coins<sup>4</sup>. The study of a cud found on the reeded edges of 1832 JR-2 and JR-3 dimes has also led to insights into the minting process<sup>5</sup>, and a remarkable photograph of the progression of this cud on 7 of these dimes appeared in the auction catalog of Logan's collection<sup>6</sup>. But when it comes to the lettered edges of bust half dollars, I'm not aware of any ongoing or past studies of their edge cuds. It would seem to be an area that is ripe for research.

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3. William J. Subjack and Allen F. Lovejoy, *Early Dimes, 1796-1837*, a paper given for the 1986 Coinage of the Americas Conference at the American Numismatic Society. Subsequently published in "America's Silver Coinage, 1794-1891" by the American Numismatic Society, New York City, 1987, pp. 123-125.
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5. Louis A. Scuderi, The Broken Edge Die on 1832 Reverse B Dimes: What Can It Tell Us About the Minting Process? *John Reich Journal*, Vol. 13 / Issue 3, July 2001, pp. 24-29.
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# **The David J. Davis Dime Auction**

**Bradley S. Karoleff, NLG**

The name David J. Davis will live as a numismatic legacy forever due to his dedication in forming meaningful collections of Reich designed coins but more significantly for his role in founding the **John Reich Collectors Society** and his co-authorship of **Early US Dimes**.

Russ Logan, in his history of the JRCS in 1997, wrote; "David Davis was the person most instrumental in bringing together the eight individuals he knew who collected three or more of the series of the Turban Head design....after the sale of Stew's (Stew Witham's collection of half dimes, 1977 Freeman sale by RARCOA) collection Dave, John McCloskey and I agreed to author a book on the early dimes. The Dime Book supplied the catalyst for structuring JRCS on a more formal basis. On March 20, 1983, all five authors...met in Cleveland, Ohio to finalize the details for the Dime Book and lay the groundwork for organizing the JRCS.... At the Baltimore ANA convention (1984) they decided to open the membership to anyone willing to pay \$10 annual dues, which would include a subscription to **the John Reich Journal**....Dave Davis volunteered to be editor, and published the first journal in January 1986." Thusly, the JRCS was born, a vision of a few dedicated collectors cemented together by David and their common love for the Reich designed coins.

Besides being "elected" as first editor of **The John Reich Journal**, David was the only President the Society had until he stepped down in 2011 due to his failing health. He was appointed President Emeritus in recognition of his dedication to the Society. David also held membership number 1 as a tribute from the founding members to his leadership.

David collected many things during his career, including postcards and banknotes of Michigan. In addition he collected maps, multiple denominations of coinage and he amassed a world class numismatic library. I can remember standing in awe gazing up at the lawyer stacking bookcases from floor to ceiling in his library during my first visit. David arranged for the sale of most of his collectibles before his death, except his dime collection. The fact that it was the only collection to remain in his possession until his death speaks volumes of his love for the dimes. After his passing, Stacks/Bowers was chosen to sell his dime collection at their ANA sale in Philadelphia in 2012.

As with any auction of a famous collection, the announcement brought excitement to the collecting community. We anxiously awaited the delivery of the auction catalog to peruse the offerings. We knew that the staff at Stacks/Bowers had agreed to list each of the die marriages individually to have a historical record of this famous collection. This compromise by the auction company to honor a dignitary in the hobby was deeply appreciated by the collecting community. There have been a few



other instances where the auction company has listed each coin as an individual lot despite not being able to profit from a few of those items. Bowers did it with the Logan collection and Superior was known for their efforts with large cent sales. The Goldberg's have followed suit in their new location and Heritage has demonstrated a willingness also for certain collections. This allows die marriage collectors without deep pockets to obtain an affordable coin for their collections in addition to owning the catalog for future reference.

I was able to go to Philadelphia a couple of days early to view the coins without the distraction of large crowds in the lot viewing room. It was a relaxed few hours spent viewing the coins that it took David decades of work to assemble. As with other collections auctioned recently, the original documentation from David was included with each lot. Many times this included the price paid and source of the coin. It is important to maintain the provenance of the coins from these types of collections. The auction companies are to be commended for their efforts in maintaining this important information. To read more about provenance protection please refer to **JRJ** Volume 6/2, April 1992; *Provenance and Protection for Posterity* by Russell J. Logan and **JRJ** Volume 7/3, April 1993; *Auctions, Envelopes and Plate Coins* by Charles D. Horning.

The dimes in David's collection did not match the quality of the previously sold Logan collection but were of similar overall quality to the pieces found in the Reiver sale. Many coins were chosen to document a particular minting characteristic that would illustrate well in the dime book when it was written in 1984. The authors purchased many coins for study that would not meet the technical requirements of today's slabbing services. David's entire collection was submitted to PCGS prior to listing in the auction catalog, numerous coins were returned in "genuine" holders. All of the coins were, however, noted on the slab insert as being part of the Davis Collection.

The three most valuable dimes in the Davis collection were listed in the Rarity Night Catalog. They included the 1822 PCGS XF45 which was a nice original problem free circulated example of this date rarity. It realized \$10,575 against a Trends price of \$8000 in XF40 (prices here reflect the buyer's premium). I liked the piece and am sure the new owner will enjoy it as much David did while he owned it. The next dime in the Rarities night sale was the rare 1827 JR10 die marriage that PCGS called VF details, cleaned. I noticed a few light hairlines on the obverse which I believe was the reason PCGS did not grade the coin. I thought it was harsh that they rejected the coin for those imperfections on a coin of this grade. It sold for the bargain price of \$12,650! The lucky buyer resubmitted the coin and received an XF grade from PCGS after the sale. The famous 1829 curl base 2 dime was the next lot graded F15 by PCGS; it sold for \$12,925 against a Trends value of \$15,000. I noted that it was a nice problem free coin retaining a "crusty" look around the devices.

The rest of the collection was sold as individual lots on Tuesday evening. As mentioned earlier, each lot was accompanied by the holder that David used to store the coin, which, oftentimes, was the one the coin was in when purchased. Keeping the holders with the coins is problematic for the auction company and they are to be commended for their additional expense and effort. I will review significant lots from the sale based on my notes and observations. Remember that all are graded by PCGS. I am listing only the hammer prices here as the auction company had a sliding scale of buyers premiums based on the total of the invoice and/or method of payment. The Davis dimes were sold without reserve; therefore, any sales to the book were actual sales, not buybacks.

Lot 5339 was an 1809 JR1 R4 graded AU58, any high grade 1809 is worthy of note. I thought the coin was flat, lacking the mint luster needed to be a 58. It sold to a book bidder for \$4065, virtually equal to the Trends listing. I am sure an AU with luster would have brought significantly more. This was one of the few dimes not from the Davis collection that was included in this section of the sale. Davis owned an AU details, questionable color coin that sold for \$1800 to the book. It was obviously cleaned but, in my opinion, had more life than the AU58.

There were four 1811/09 dimes in the sale, 3 of which belonged to David. The XF45, not a Davis coin, did not sell. David's VF30 sold to a book buyer at \$1800, well over the VF20 Trends of \$650! It was followed by a VF cleaned at \$500 (book), VF rim damage at \$450 (floor) and VF bent \$425 to the Internet.

One of my favorite coins in the sale by "look" was the 1814 JR1 XF45 which sold to a friend of mine on the floor for \$1300. Small date 1814 dimes Trend in XF40 at \$600 and AU50 for \$1200. This was a precursor to what the original coins with superior eye appeal would bring.

Many coins were selling to either book bids or to the Internet. Most of these collectors were relying on the grades and descriptions of the certification company. They had no idea past the images on the website as to how the surfaces looked under direct light. I feel many of them were disappointed with the surface quality of many of the coins that were "passed on" by the floor bidders who inspected the lots in person. There is no substitute for either viewing the coins in person or having a trusted friend or dealer do so for you. The small added expense is money well spent in order to prevent the purchase of a coin that will disappoint you.

There were numerous coins in the sale that were plate coins from the 1984 book on die marriages. I had hoped to purchase one for my collection, as I already own a few from the half dime book and the Overton books. I was unsuccessful as many other collectors coveted this provenance as much as I. I have reviewed the plate coins and their prices in table A.



Lot 5358 was an 1820 JR5 R4 in AU53. This is the famous notched star marriage. All 13 stars are notched which is accepted as John Reich's "signature" on many Capped Bust coins. This "signature" is generally found on the 13<sup>th</sup> star of the half dollars. This obverse die is the ONLY instance in the dime issue that shows this abnormality, and it is on ALL 13 stars! The coin was highly contested by me on behalf of a client who lost to the book at a final bid of \$1500. The other notched star marriage, JR6 R3 in AU50 followed. The JR6 is not as rare in high grade as the JR5 and this coin had very busy surfaces. It sold at \$700, again to a book bidder.

My first personal success was the 1820 JR7 XF40 at \$450. It has a dark charcoal original surface and I thought a fair buy at Trends price. As I am in the infancy of my dime collection, it was a welcome addition. The next coin, a JR8 in AU53 sold on the floor for \$1100, almost AU58 Trends price. Lot 5365 was a JR9 with VF details damaged holder, which sold for \$450 to the Internet. I did not believe the surface marks on the coin merited the no grade status. A VF bust coin will show some marks from circulation, and these were not unsightly. Each to their own opinion I suppose. The rare 1820 JR12 in VG10 sold to an Internet bidder for \$1300. I think this was a good purchase for a die marriage collector as this marriage is still in the top 5 or 6 most difficult to obtain.

Speaking of difficult die marriages- the rare 1821 JR2 sold just a few lots later. I was the under bidder, with the coin selling to the Internet at \$2600. If the buyer is reading this article, congratulations! You purchased a neat coin and one of the better buys of the sale, based on what was to come. The buyer also got a bonus in that this coin was the plate coin for the book. I purchased the 1821 JR9 dime in AU50 for a client. The coin is very natural, but lacking luster likely from storage in a leather pouch. The tannic acid in the leather has a tendency to "dull down" silver coins stored in this manner for extended periods of time. However, this is still a difficult coin in high grade.

Possibly the finest known 1823 JR2 dime, graded MS64, then sold for \$14,000 to a book bid. This is an R5 die marriage coupled with a "showcase" grade. Did it go to a dealer or a die marriage collector? This was the plate coin in addition to owning the famous Lovejoy provenance. His collection was auctioned by Stacks in 1990.

The rare 1824/2 JR2 came up a few lots later. It was graded VF20 and, in my opinion, was fortunate to have been graded. A floor bidder scarfed it up for \$2800! This made me think that I should have bid more on the 1821 JR2. It just goes to show that the plastic does help sell some coins! This is a rare marriage normally found in lower grades as the average grade reported in the last JRCS census was only an 18 with a maximum of 45.

One of the showpieces of the Davis collection was the 1827 JR1 in MS62. It is the plate coin from the dime book as well as being formerly from the Lovejoy collection. He was a co-author of the dime book and amassed one of the best dime

collections ever assembled. The coin was an early die state clearly showing the controversial recutting of the 7. No one has ever conclusively proven whether it is a 7/5, or simply a recut (repunched) 7. The coin sold to an Internet bidder for \$9000! I thought it may be a candidate for an upgrade with a resubmission. Has anyone seen it in a MS63 (or 64) holder? A cleaned XF followed selling on the floor for \$425 and two VF35's one to the Internet for \$450 and the other to the book at \$223. This is a popular die marriage for collectors. The rare 1827 JR2 in a VF35 holder but with a pin scratch on Liberty went to the book at \$2800! A nice original 1827 JR7 in AU58 sold on the floor for \$950. The JR9 in VF30 hammered to a floor bidder at \$450.

I thought that both of the 1828's brought good prices. The small date MS61 brought \$1300, near MS60 trends and the large date JR2 in AU53 sold for \$2400, nearly AU58 Trends price. Both coins had nice original toning and were very attractive.

The 1829's began with the scarce JR1 AU50 selling for \$625 to a floor bidder. I thought the coin was a bit grey and dull from an old dipping. This is still a much underrated die marriage. If you ever have the opportunity to buy a nice one, do not hesitate. Lot 5433, a JR4, was an ungraded Unc details coin with "questionable color". I really liked it and thought it was better than many of the graded coins; other attendees were of the same opinion. A book bidder also agreed with us, paying \$1800. The JR6 in MS63 sold on the floor for \$1400. The small 10C JR8 R4 in AU55 formerly from the Lovejoy collection went to the book at \$4500. One of the highest graded dimes in the Davis collection the JR9 MS64+ with nice multicolor toning went to a floor bidder at \$9500.

1830 began with a large surprise. The JR1 R4+ VG8 without the cud sold for \$750 to a floor bidder! This is a very difficult marriage to obtain, but \$750 for a VG R4? The popular 1830/29 AU58 former Lovejoy coin hammered at \$1300 on the floor.

I purchased the 1831 JR5, AU cleaned with the cud reverse, for \$300. The cud did not show well in the holder but is wonderfully complete.

The 1832 JR1 in AU58 with neat color sold to my customer for \$1400 and the JR4 in MS64 went to the book at \$2400 and the JR5 in AU cleaned sold for \$850 to the book. I thought the coin was harshly treated by PCGS and looked better than many other graded examples.

The 1833's had a few neat coins including the JR2 R5 AU details questionable color, which sold for \$950 to the floor and the JR3 R6 in AU55 sold for \$4750, also to a floor bidder. This was an extremely beautiful coin that David purchased from Russ when he upgraded his! The beautiful JR4 in MS62 sold to an Internet bidder at \$1350 and the JR4 in MS62 sold for \$1030 to the book.

1834 doesn't sport any major rarities but the JR6, Unc details questionable color, sold to the book at \$1000. I bet the bidder either saw the coin in person or had a



dealer preview it for him. It was a plate coin from the dime book and was a former Lovejoy coin.

The nice 1835's included a JR7 AU55 at \$1800 to a floor bidder and a JR8 AU58 also at \$1800 to the floor.

The Davis dimes soon ended with lot 5533, an 1837 JR4 VF details cleaned selling at \$70 to the Internet.

Another of the Dime author's collections was thusly dispersed to the collecting community for our stewardship. The torch has been passed to the next generation of die marriage collectors. The pioneers of our hobby have left us with a wonderful road map to aid in our collecting interests. The coins they obtained for their collections have been entrusted to us complete with some impressive pedigrees that must be retained for future generations of collectors.

The following charts show the 15 plate coins featured in the Davis sale and the coins David purchased directly from the Logan sale which he documented in an article in the JRJ, *The Russell J. Logan Collection, My Auction Story*, volume 15, Issue 2, July 2003.

PLATE COINS

Lot #	Description	PR	Trends
5356	1820 JR4 R4 XF40 Small 0	\$900 Internet	\$475
5361	1820 JR7 R2 AU Cleaned Small 0	\$750 Book	AU 50 \$850 AU 58 \$1200
5373	1821 JR2 R6 Fine Cleaned Large Date	\$2600 Internet	\$85
5374	1821 JR4 R2 AU Cleaned Large Date	\$800 Internet	AU 50 \$600 AU 58 \$1000
5388	1823/2 JR2 R5 MS64 Large E's	\$14,000 Book	MS 63 \$3K MS 65 \$12.5
5392	1825 JR1 R4 AU Cleaned	\$750 Floor	AU 50 \$750 AU 58 \$1000
5405	1827 JR1 R2 MS62 Recut 7	\$9000 Internet	MS 60 \$1500 MS 63 \$2500
5433	1829 JR4 R2 AU Questionable Color	\$1800 Book	AU 50 \$475 AU 58 \$750
5435	1829 JR5 R4 AU Cleaned Small 10C	\$850 Book	AU 50 \$475 AU 58 \$750
5475	1833 JR4 R1 MS62	\$1350 Internet	MS 60 \$1000 MS 63 \$2000
5483	1833 JR7 R5 VF Damaged Last 3 High	\$312 Internet	\$85
5485	1833 JR8 R5 AU Cleaned	\$650 Floor	AU 50 \$450 AU 58 \$750
5501	1834 JR6 R1 UNC Questionable Color LG 4	\$1000 Book	MS 60 \$1000 MS 63 \$2000
5513	1835 JR4 R2 MS62	\$1700 Book	MS 60 \$1000 MS 63 \$2000
5519	1835 JR8 R3 AU58	\$1800 Floor	\$800

Following, is the table for the coins purchased by Davis directly from the Logan collection as reported in his article *The Russell J. Logan Collection, My Auction Story*, JRJ 15/2, July 2003.

Davis #	Logan #	Notes	Davis PR
5361	2027	1820 JR7 Logan AU55 Plate Coin, formerly Stacks Bareford & Lovejoy as "UNC", Stacks May '91 sale as AU. Bareford paid \$12.60 in Mehl's Allenburger sale, Lovejoy paid \$2600, Russ \$495, Davis \$550.	Now AU cleaned at \$750
5378	2040	1821 JR6 graded XF45 in Logan sale. Russ paid \$125 in 1979, Davis paid \$320 in the Logan sale.	XF tooled at \$140
5385	2044	1821 JR10 graded AU50 in Logan sale. Pedigree is Lovejoy, Subjack, Logan, and Davis at \$475.	AU CL at \$750
5430	2078	1829 JR1 graded XF45 lightly cleaned in Logan sale. Russ paid \$165, Davis paid \$425 in the Logan sale.	AU50 at \$625
5435	2085	1829 JR5 Logan AU50 Plate Coin, formerly 1976 ANA sale to Lovejoy at \$260, Lovejoy sale to Russ at \$605, Davis paid \$450.	AU CL at \$850
5440	2095	1829 JR12 Logan Sale AU58. Russ paid \$450 in 1983, Davis paid \$550.	AU Altered \$280
5453	2104	1831 JR1 Logan AU50, faint hairlines, late die state. Russ paid \$250 in 1987, Davis paid \$250 in Logan sale.	AU CL \$220
5476	2129	1833 JR4 Logan AU58. Pedigree is 1980 Superior Burghoff sale, MS60 to Lovejoy at \$2200, Lovejoy sale, BU to Russ at \$605, Davis paid \$375.	MS62 \$1030
5493	2140	1834 JR2 Logan AU50 scratch. Russ had paid \$285, Davis \$240.	AU CL \$260

Davis paid an aggregate \$3635 hammer for the coins in the Logan sale in 2002. They sold for a total of \$4905 at the Davis sale in 2012. 10 years and with a little less than a 40% increase. Compare this to the huge prices Lovejoy paid for some of the same coins earlier. This makes me think of Dr. Sheldon's comments that you should not spend more on a coin than you can comfortably lose. Future collectors may not view the coins we treasure with the same eye we do. Sit emptor cavete (Let the buyer beware)!





# The John Reich Collectors Society wants you!

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The purpose of The John Reich Collectors Society ("JRCS") is to encourage the study of numismatics, particularly United States silver and gold coins minted before the introduction of the Seated Liberty design, and to provide technical and educational information concerning such coins. A member's name and address will not be included in any membership directory issued by JRCS or be disclosed to others without prior consent of such member.

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Indicate your area(s) of interest in Early United States Coins:

- |   |                                       |
|---|---------------------------------------|
| a ____ Flowing Hair Bust Half Dimes     | h ____ Capped Bust Quarter Dollars    |
| b ____ Draped Bust Half Dimes           | i ____ Flowing Hair Bust Half Dollars |
| c ____ Capped Bust Half Dimes           | j ____ Draped Bust Half Dollars       |
| d ____ Draped Bust Small Eagle Dimes    | k ____ Capped Bust Half Dollars       |
| e ____ Draped Bust Heraldic Eagle Dimes | l ____ Flowing Hair Bust Dollars      |
| f ____ Capped Bust Dimes                | m ____ Draped Bust Dollars            |
| g ____ Draped Bust Quarter Dollars      | n ____ Gold Issues                    |

I hereby apply for membership in JRCS. As required by the By-Laws of JRCS I agree to pay promptly all my debts or other obligations to JRCS or any of its members. I enclose a check or money order for \$25.00 payable to "John Reich Collectors Society" for my annual membership contribution, or \$625.00 for a life membership in the Society.

Dated: \_\_\_\_\_  
(Signature of applicant)

If applying for reinstatement, please give your former JRCS member # \_\_\_\_\_

### Guarantee (if Applicant is under 21 years):

I guarantee payment by the Applicant of his/her debts or other obligations to JRCS or any of its members. I am 21 years or older.

\_\_\_\_\_  
(Signature of Guarantor)

Relation to Applicant \_\_\_\_\_

### Sponsor's Statement:

I sponsor the above Applicant for membership in JRCS.  
My JRCS member number is # \_\_\_\_\_

\_\_\_\_\_  
(Signature of Sponsor Member)

John Reich Collectors Society (Employer Identification No. 34-1427467) is exempt from Federal income tax under Section 501 (c)(3) of the Internal Revenue Code. As such, gifts and contributions made to John Reich Collectors Society may be deducted as provided in the Internal Revenue Code.

Back issues of The John Reich Journal are still available to members for \$9.00 each postpaid.  
Visit [www.jrcs.org](http://www.jrcs.org) for a complete listing of the issues in stock.

